

ESSAYS ON
BEEF CALF MANAGEMENT PRACTICES AND
THE MARKET VALUE OF SELLER REPUTATION

By

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THE MARKET VALUE OF SELLER REPUTATION

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Abstract:

This thesis summarizes results from two recent surveys. The first essay discusses beef management and marketing practice adoption by Oklahoma cow-calf producers. Adoption rates for beef calf management and marketing practices as well as constraints and incentives to practice adoption are summarized. Increased reputation with buyers is a commonly cited incentive for producers to adopt certain practices. The second essay expands on this aspect of reputation with an additional survey. This survey uses a stated preference approach to elicit bids from feeder cattle buyers based upon varying levels of preconditioning and reputation. Results from both surveys contribute to the knowledge base in agricultural economics and also have valuable extension programming implications.

The value of seller reputation in cattle markets is discussed anecdotally as an important component of the price paid by the buyer, but has not been observable with standard market data. A positive reputation may be built over time by marketing cattle that perform well for buyers' needs. That performance is linked to a host of things, including calf management practices and cattle genetics. Likewise, a negative reputation is possible as well. When sellers do not have an established reputation, it is possible that third-party certification of management practices partially substitutes for an established reputation regarding market value. This study will use an electronic survey administered to cattle buyers at live cattle auctions across Oklahoma to assess the contribution of seller reputation to market price for feeder cattle.

The results will benefit cattle producers as the relative value of establishing a reputation or substituting third-party verification for reputation determines the incentives for adopting and/or certifying recommended management and marketing practices. This knowledge can be used to enhance the profitability of cattle producers through better decision making regarding management and marketing practices.

TABLE OF CONTENTS

TABLE OF CONTENTS.....	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
Chapter 1 INTRODUCTION.....	1
1.1 Essay One.....	2
1.2 Essay Two	3
Chapter 2 BEEF MANAGEMENT AND MARKETING SURVEY.....	5
2.1 SIZE AND LOCATION OF OKLAHOMA COW-CALF OPERATIONS.....	6
2.2 PRODUCTION AND MARKETING OVERVIEW	7
2.2.1 Calving Season.....	7
2.2.2 Timing of Vaccination	10
2.2.3 Timing of Marketing.....	11
2.2.4 Marketing Venue	13
2.2.5 Distance to Market	15
2.3 PRACTICE ADOPTION.....	17
2.3.1 Basic Pre-Weaning Practices	20
2.3.2 Preconditioning Practices.....	24
2.3.3. Marketing Practices	28
2.3.4. Record Keeping Practices	32
2.3.5. Summary of Practice Adoption.....	36
2.3.6. Participation in special marketing programs.....	39
2.3.7. Information Sources on Management and Marketing	40
2.4. PRODUCER DEMOGRAPHICS.....	41
2.4.1. Years in Cattle Business	41
2.4.2. Age.....	42
2.4.3. Education	42
2.4.4. Membership/Training	43
2.4.5. Net Income.....	44
2.4.6. Farm Income	44
2.5 CONCLUSION.....	45
2.6 REFERENCES	49

Chapter 3 THE VALUE OF SELLER REPUTATION.....	52
3.1.1. Objectives	54
3.2 REVIEW OF LITERATURE	54
3.2.1. Reputation definitions	55
3.2.2. Cattle price determinant research.....	56
3.2.3. Quality signals	58
3.3 METHODS AND DATA	60
3.3.1. Hypotheses	60
3.3.2. Methods and Data	61
3.3.3. Empirical model.....	66
3.4 RESULTS	66
3.4.1. Data Summary	66
3.4.2. Model Selection	73
3.4.3. Chow Testing	74
3.4.4. Results	75
3.5 CONCLUSION.....	81
3.5.1. Implications.....	81
3.5.2. Limitations	82
3.6 REFERENCES	84
Chapter 4 CONCLUSION	86
APPENDICES	89
VITA.....	129

LIST OF TABLES

Table	Page
Table 2.1: Marketing Venue: 2008 Summary.....	13
Table 2.2: Premiums/Discounts for Various Preconditioning Practices.....	19
Table 2.3: Deterrents from Listed Management and Marketing Practices	40
Table 2.4: Useful Information Sources.....	41
Table 3.1: Survey Definitions	63
Table 3.2: Summary Statistics	67
Table 3.3: Ranked Reputation Definitions.....	73
Table 3.4: Structural Difference Testing Summary	75
Table 3.5: Parameter Estimates for Pricing Model (N=405)	79
Table 5.1: Distribution of Producers by Region and Herd Size	89
Table 5.2: Monthly Calving Percentages.....	89
Table 5.3: Breakdown of Defined Calving Season.....	90
Table 5.4: Production Overview	91
Table 5.5: Marketing Overview	92
Table 5.6: Practice Adoption	94
Table 5.7: Incentives: Percentages of Those Adopting Each Practice.....	95
Table 5.8: Constraints: Percentages of Those Not Adopting Each Practice.....	96
Table 5.9: Producer Knowledge	97
Table 5.10: How often producers sought out marketing information from the following sources in the last 12 months	98
Table 5.11: Demographic Summary of Oklahoma Cow-Calf Producers (Survey 1)	99
Table 5.12: Description of Independent Variables	100

LIST OF FIGURES

Figure	Page
Figure 2.1: Herd Size According to Region.....	7
Figure 2.2: Calving Season	8
Figure 2.3: Breakdown of Defined Calving Season	9
Figure 2.4: Distance to Market by Herd Size	16
Figure 2.5: Practice Adoption Summary	37
Figure 2.6: Income from Cattle by Herd Size.....	45
Figure 3.1: Example of Pricing Question	64
Figure 3.2: Averages and Percent Changes from Listed Base Price.....	69
Figure 3.3: Bid Summary.....	70
Figure 3.4: Respondents by Location (✕USDA-AMS Reporting).....	71
Figure 3.5: Head Purchased Over a Year.....	72

Chapter 1 INTRODUCTION

The purpose of preconditioning practices and programs is to reduce the stress of beef calves as they move through the supply chain, increase overall herd health, and put more money into the rancher's pocket. Whether practices focus on nutrition or herd health, preconditioning adds value to the entire production chain. Lalman and Mourer (2014) stressed that the costs associated with preventable illnesses are feasibly avoidable. The intense management and treatment time for sick cattle can be reduced with a vaccination regime, while also increasing and improving end product volume and quality. Cow-calf operations have the opportunity to develop a positive reputation for quality through repeated transactions in the marketplace after implementing practices that encourage calves to perform well. Many studies have been directed toward feeder cattle price determination. Market premiums for preconditioning practices have been reported in many of these studies (Ward and Lalman, 2003; Williams et al., 2013; Zimmerman, et al., 2012). Most commonly, price is determined by visual and market qualities present on date of sale.

Seller reputation is a little understood aspect present in feeder cattle markets. Some studies (Turner, McKissick, Dykes, 1993; Schulz, Dhuyvetter, Doran, 2015) discuss that it may be important in pricing, although accurate measurement has been a challenge. In many cases, at least basic practices such as castration and dehorning need be adopted in order to establish a reputation for quality. Although the benefits exist, there

is still a cost of practice implementation, which can often be a deterrent. Ward, Vestal, Doye, and Lalman (2008) examined the reasons producers choose not to implement some production practices. Many demographic qualities, such as age or income, influence practice adoption. Managerial time and herd size also effect practice adoption. This study also stressed the need for targeted programming in order to increase extension effectiveness.

Chapters 2 and 3 summarize results from two recent surveys that seek to increase understanding of producer decisions and the value that the market places on those decisions. The first essay discusses beef calf management and marketing practices adopted by Oklahoma cow-calf producers. Producer use of selected management and marketing practices as well as producer perceptions of constraints and incentives to adoption are summarized. In this survey, increased reputation with buyers is a commonly cited incentive for producers to adopt certain practices. The second essay expands on this aspect of reputation with an additional survey. This survey elicits stated preference bids from cattle buyers based upon varying levels of preconditioning and reputation. In addition to adding to our research knowledge base, the results from both surveys have valuable extension implications.

1.1 Essay One

The Beef Management and Marketing survey was designed to benchmark common management and marketing practices undertaken by Oklahoma cow-calf producers. In order to increase ranch profitability, extension programming needs to be directed to producer needs. The survey results reveal where programs can target needs, based on location, operation size, and other producer demographics The survey contains demographic information, which is useful in determining what an average producer in the

survey population looks like and how decisions vary among groups of producers. This analysis is crucial to extension programming in that it allows educators to pinpoint practice adoption deficits and structure programming to fit specific needs.

The overall goal of extension programming in this area is to increase herd health, efficiency, and value, in order to create a viable end product, ultimately increasing producer profitability. Education on preconditioning practices is a large need, in that the practices can increase ranchers' profitability as well as benefiting the animals. Profits associated with these practices result from analyzing visual and provided information at auction. Although feeder cattle price determinant research is extensive, reputation may be a component of auction bids and prices yet omitted from models, since it is difficult to measure. Many producers cited increased reputation with buyers as an incentive to adopt various practices. This assumption is where the second essay begins.

1.2 Essay Two

Reputation has been referred to as a quality signal in an environment of asymmetric information (Shapiro, 1982). At cattle auctions, price is reliant upon visual signals (appearance) and provided weight and lot size information. Any additional announced information regarding preconditioning regimes could be considered hearsay unless there is a certification agent behind the claim. Certification organizations may carry a reputation of their own. However, in the absence of full information, buyers have been hypothesized to regard familiarity with various sellers as an additional quality signal of the lot of calves in question. This study was designed to assess whether various levels of seller reputation result in premiums or discounts from cattle buyers, along with varying levels of knowledge regarding preconditioning.

Some studies have attempted to capture a reputation effect in cattle pricing models by including a dummy variable for whether the seller was announced at time of sale. These models generally fail to capture a premium or discount, likely because of noisy data and poor proxies for reputation. Without a known solution to better include reputation into a pricing model, a stated preference survey approach is implemented in this study. The data results from hypothetical pricing questions that allow reputation value to be discovered. To do this, all visual cues and lot information was held constant, leaving only reputation and preconditioning levels left to vary.

This hypothetical price discovery method is an innovative approach to measuring the value of reputation in this environment, where previous models fail. Although a survey is subject to a range of biases and may differ from real data, this research provides a starting point for additional research to build upon. Seller reputation may not be easily quantifiable, but this study suggests it is an important aspect of feeder cattle pricing.

Chapter 2 BEEF MANAGEMENT AND MARKETING SURVEY

The Oklahoma Beef Management and Marketing Survey was designed to solicit information regarding cow-calf producers' adoption of management and marketing practices for calves. In order to better assess extension programming needs, the survey sought to better understand what Oklahoma producers are doing on the ranch prior to marketing calves as well as what choices are made in marketing those calves. The ultimate goal of extension programming is to improve producer decision making and increase profitability of Oklahoma beef producers and the industry as a whole. The Beef Management and Marketing Survey has facilitated research, predominantly focused on demographic effects on adoption or non-adoption of practices (Raper and Mourer, 2015; Williams et. al, 2013). This comprehensive summary of producer responses is composed here to provide better insight into Oklahoma beef cattle operations and to provide information to extension educators.

The survey was developed by research and extension faculty in the disciplines of Agricultural Economics and Animal Science. Questions encompass current management and marketing practices, production decisions, information sources, and demographics of Oklahoma producers. The United States Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS) Oklahoma City office was contracted to send the survey to 17,511 of the 32,653 cow-calf producers in Oklahoma. In total, 1,861 responses

were returned. Those with blank answers as well as those whose primary cattle business was not the sale of commercial calves were removed, leaving 1293 useable responses.

The survey is included as Appendix 2.

2.1 SIZE AND LOCATION OF OKLAHOMA COW-CALF OPERATIONS

Herd size was utilized to easily and effectively sort responses. Intuition indicates that efficiency, and so practice adoption and knowledge, would need to increase as herd size grows in order to be productive. Data was also divided into regional quadrants by Interstates 40 and 35 with the exception of the Panhandle, which was considered individually. Oklahoma is a diverse state in way of culture and climate, which becomes apparent when survey results are discussed regionally. Along with directing educational programs to the correct area, this separation is necessary due to the diverse landscape and agricultural differences statewide that may impact operating decisions. Because of this, we would expect differences to occur regionally. Sorting by herd size and region has the advantage of letting County Educators know what producers to target certain information to in their counties.

Operations were split into herd sizes of 1 to 24, 25 to 49, 50 to 99, 100 to 249, 250 to 499, 500 to 999, and 1000+ head of cattle. Herd size was used due to potential economies of size for larger operations (Ward, Vestal, Doye, Lalman, 2008). Herd sizes of 1 to 24 head accounted for 13.92% of all producers. The survey results showed 29.54%, 33.33%, 18.33%, 4.10%, 0.62%, and 0.15%, respectively, for the remaining herd sizes in increasing order.

Distribution of herd sizes across regions is fairly equal for herd sizes of 1-99 (Figure 2.1). Starting at herd sizes of 100-249 head, the Panhandle's share shrinks while

the Northwest's increases. Herd sizes of 250-499 head are most common in the Panhandle, while percent of operations in all other regions is much less (3-4%). The Panhandle also has the highest percentage of herd sizes 25-49, although there are many operations this size in other regions as well. Herd sizes of 500-999 head are more common in the east, with no observations in the Panhandle. Lastly, the two producers with 1000 head or more in their operation are located in the Southeast and Northeast.

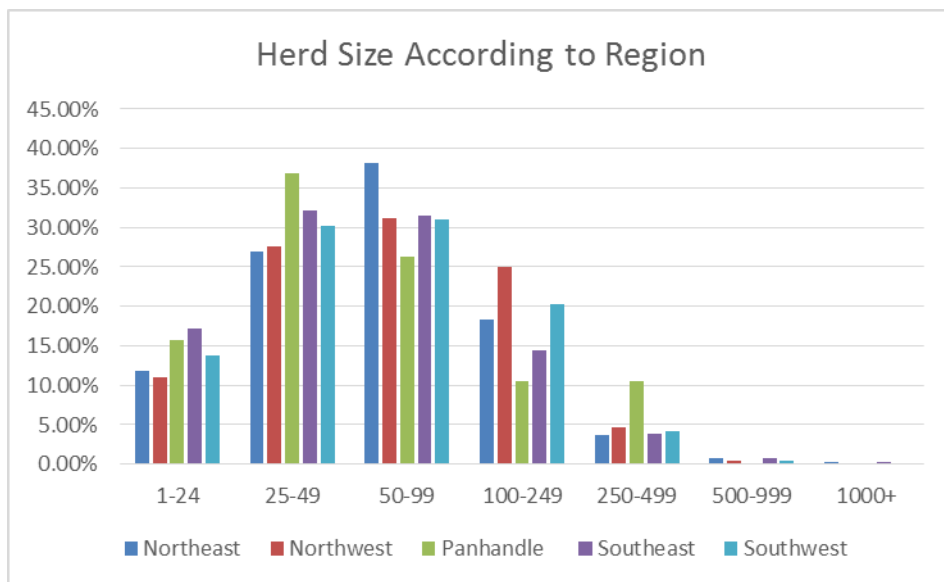


Figure 2.1: Herd Size According to Region

Sorting by region is also a benefit for the County Educators. Regional divisions are defined by interstate 40 and interstate 35. The reported percentages of responding producers in each region are 30.78% in the Northeast, 14.85% in the Northwest, 1.47% in the Panhandle, 32.7% in the Southeast, and 20.19% in the Southwest.

2.2 PRODUCTION AND MARKETING OVERVIEW

2.2.1 Calving Season

Defining a specific calving season with an array of sequential months is difficult, as it varies by region and producer and is influenced by climate, geography, and producer

management preferences. Respondents were asked to report the estimated percentage of calves born in each month. February, March and April have the highest calving concentration statewide at 27.47%, 33.05%, and 21.06%, respectively (Table 5.2). Lowest calf crop percentages were reported for June, July, and August, at 10.69%, 8.73%, and 11.16%, respectively. The remaining months were fairly equal with a range of 14-19%. We use this monthly calving data to approximate typical Oklahoma calving seasons, including spring, fall, dual, or undefined (Table 5.3).

Defined calving seasons were defined as any consecutive three-month period in which producers calved 80% or more of total calf crop. The three month periods then represented an early, mid, and late season for each of the four (spring, summer, fall, winter), displayed in Table 5.3. Early spring, mid spring, and late winter seasons contained the largest percentages of producers, indicating that most of defined season calves were being born January to May. Overall, only 34% of producers have a defined calving season (Figure 2.2).

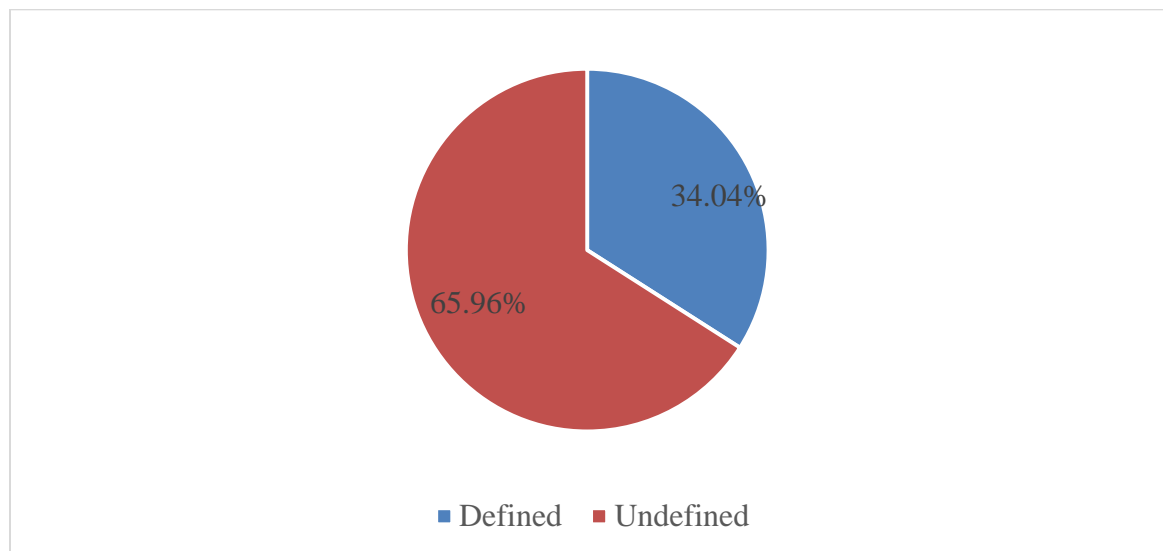


Figure 2.2: Calving Season

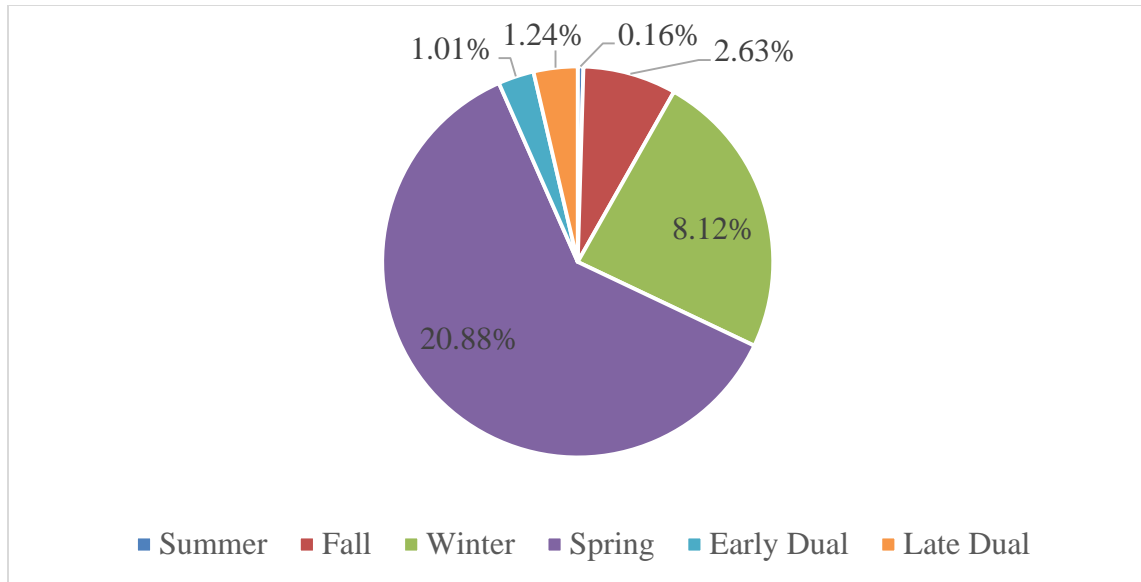


Figure 2.3: Breakdown of Defined Calving Season

Dual calving seasons were defined as producers calving more than 80% across three consecutive spring months and three consecutive fall months combined. There are few producers in Oklahoma that calve more than one season a year (2.25%). The totals for each season making up the defined seasons are summarized in Figure 2.3. Clear spring and winter seasons were defined, with a smaller portion (2.63%) making up a fall calving season.

Calving seasons are summarized by region and herd size in Table 5.4. The Panhandle has the highest percentage of producers with a defined calving season (73.68%), though there are a relatively low number of responses from this region. The Panhandle is also the only region with no producers calving in the fall. The region with the next highest percentage of reported defined calving season operations is the Northwest (43.75%), mostly concentrated in the winter and spring. Fall calving is rare and relatively equal across regions. The Northeast has the least amount of producers reporting a winter calving season (3.77%) but also has the largest dual season proportions

(5.03%). Overall, the east contains the only producers in the late dual season. The east also has less spring calving (16-17%) than the west (22-32%). Producers with summer calving seasons are relatively sparse and concentrated in the south.

The percentage of operations with a defined calving season is similar across herd size and ranges from 32-40% with the exception of the smallest and largest herd sizes. Note that only two producers report a herd size of greater than 1000 head, one calving in the fall and one having an undefined calving season (Table 5.4). The next highest proportion of fall calving is 3.06%, in herd sizes of 50-99 head. The majority of defined season producers with a herd size of 500-999 head reported a winter calving season (22.22%). The remainder of defined season producers in this herd size report spring calving, at 11.11%, representing the least spring calving among herd sizes (with the exception of greater than 1000 head). The only summer calving producers are in the 25-49 head group (0.50%). The highest proportion of spring calving occurs in herd sizes of 100-249 head (26.99%). The herd size with the least defined seasons is 1 to 24 head (26.63%). Defined calving seasons increase with herd size, with the exception of 250 to 999 head. Across all herd sizes, 50% or fewer operations have a defined calving season.

2.2.2 Timing of Vaccination

Producers were asked to report what percent of calves were vaccinated for respiratory diseases (IBR, BVD, etc.) at the specified times of: 1 to 3 months after birth, 1 month before weaning, at weaning, or booster given at weaning. If a producer listed greater than 50% in any of the time slots, they were considered to vaccinate at that time. Table 5.4 summarizes the vaccination timing. If the producer vaccinated less than half of their calves at more than one time, they were included in the mixed category. If the mixed

value is negative, in this case, it indicates that a majority of the responding producers are vaccinating more than half of the calf crop more than one round.

Overall, 40.84% of producers report giving vaccines at 1 to 3 months after birth, 28.31% vaccinate at weaning, 15.93% give a booster at weaning, and 10.60% vaccinate 1 month before weaning. Only 4.3% of producers are included in the mixed/double category. A majority of responding producers in the west (including the Panhandle) are vaccinating more than half their calves with more than one round. The Panhandle leads in vaccinations at all times, excluding weaning. At weaning, the west administers more vaccinations to a majority of calves than the east or Panhandle. The largest concentration of vaccinations are occurring 1-3 months after birth in the Panhandle (63.16%) and the Northeast (42.71%). One to three months after birth is the most common time to administer vaccinations. Administering two rounds of vaccinations to a majority of calves generally becomes more common as herd size increases (Table 5.4). The greatest dual vaccination program occurs in herd sizes of 500-999. Again, vaccinating 1-3 months after birth is the most common.

2.2.3 Timing of Marketing

Producers were asked to report the percentage of calves marketed at various times for 2003, 2008, and what was expected for 2013. Fewer producers reported marketing at weaning with each year, although this marketing time was the most common (Table 5.5). The average percent of calf crop marketed 30 days or more after weaning slightly increased from 66.33% in 2003 to 71.55% expected in 2013. Retaining calves to market after their own stocker program was equally popular among producers, averages ranging from 72-74% of total calf crop participation. However, retaining and marketing calves

after someone else's stocker or feedlot program was rare, but averaged 62-72% of calf crop for those responding. Retaining and selling calves as bred heifers or retaining for replacement heifers/breeding stock were the most common responses in the "Other" category. The few amount of producers responding to this time reported averages near 30% of calf crop in each year.

Relatively similar trends can be noticed across regions for expected 2013 values. The Northeast markets the largest percentage of calves at weaning (82.82%), with little variation across other regions at this time. In the Northwest, most producers retain to sell after own stocker program with an average of 82.27% of calves being sold at this time. The Southwest has a similar percentage of calf crop (81.81%) listed at this time, although marketing at weaning was the most often reported marketing choice. The Northwest also has a large portion of producers responding an average 44.17% of calf crop is being retained for breeding stock or to be sold as bred heifers (Other).

Herd sizes under 100 head have a majority of producers responding the highest percentages of their calf crops being sold at weaning. Producers report a higher average calf crop marketed after own stocker program in herd sizes of 100-249 head. Herd sizes greater than 250 head never utilized other stocker programs. Producers with 1000 head or more either sold all calves at weaning or 30 days or more after weaning. Interestingly, producers with 500 to 999 head report selling a majority of calves at weaning (75%) but keep an average of 25% to sell 30 days or more after weaning—presumably to complete a preconditioning program.

2.2.4 Marketing Venue

Producers were asked to report the percentage of calves sold through various marketing channels for the years 2003, 2008, and what was expected for 2013. The locations include: regular local livestock market sales, special local livestock market sales, regular regional livestock market sales, special regional livestock market sales, Oklahoma National Stockyards regular sales, video, satellite, or internet auction, directly from ranch to stocker, directly from ranch to feedlot, and other.

Table 2.1: Marketing Venue: 2008 Summary

Producers selling 100% of calf crop at a single venue	
Through regular local livestock market sales	62.65%
Through special local livestock market sales	0.77%
Through regular regional livestock market sales	5.18%
Through special regional livestock market sales	0.39%
Through Oklahoma National Stockyards regular sales	7.73%
Through video, satellite, or internet auction	0.31%
Directly from ranch to stocker	1.47%
Directly from ranch to feedlot	1.01%
Other	0.77%
Mixed	19.72%

Local sales had near 63% of producers reporting 100% of calves were sold only at this venue in 2008 (Table 2.1). Almost 20% of producers indicate selling at more than one venue. Oklahoma National Stockyards sales had the next highest percentage of producers selling exclusively (7.73%). Regional regular sales accounted for 5% and direct selling accounted for 2%. The special sales, video auction, and other categories all had less than 1% participation, indicating their sparse utilization. Table 2.1 also shows the large disparity between regular and special sales.

Referring to Table 5.5, regular local livestock sales has the highest average percent of calf crop listed and the most producer responses over the years. Oklahoma National Stockyards and regional livestock market sales were the second and third most frequented venues. Very few producers participated in video, satellite or internet auctions over the reported years, and those that did reported 66-79% of their calf crop marketed there. The “Other” venue was frequented by a small amount of producers who report 28-37% of calves being marketed there. Common producer descriptions of this venue include: private sale, ranch to ranch sale, retained for breeding stock, and show animals.

Regular local livestock sales were again the most popular in 2013, with all regions reporting the highest percentage of calf crop expected to be sold here in 2013. Although the eastern regions had many producers listing participation in regular regional sales, the western regions listed higher percentage of total calf crop sold at that venue. Western regions also listed high percentages sold at special regional sales, though few producers in these regions participated in these sales. The Northwest region and the Panhandle had the fewest producers utilizing Oklahoma National Stockyards sales. Unlike the overall averages, the second most utilized venue was directly from ranch to stocker for producers in the Northwest (58.33%). Additionally, those directly selling from ranch to feedlot listed higher average calf crop sold in the western regions, including the Panhandle. Producers in the west, excluding those in the Panhandle, also listed higher percentages sold in the “Other” venue category.

Herd sizes of 1 to 24 head did not utilize special sales and sold predominately at regular local sales, sometimes selling at the Oklahoma National Stockyards. This is similar for herds of 25 to 49 head, with a small jump in regular regional sale popularity.

Producers continue to diversify venues as herd size increases. Herd sizes of 250-499 have near equal producer participation across regional local sales, Oklahoma National Stockyards sales, and directly selling from ranch to feedlot. Only two producers sell at local sales in herds greater than 500 head. One producer with a herd of 1 to 24 head and one with greater than 1000 head sells near 100% of calves through video, satellite, or internet auctions, representing the largest percentages sold at this venue.

2.2.5 Distance to Market

Distance to market was measured by reporting percentage of calves sold less than 50 miles from the ranch, within 51 to 100 miles from the ranch, or more than 100 miles from the ranch. Producers who listed any percentage in two or more distances are reported in the mixed category. To better understand the mixed category, Table 5.5 displays the average percentages listed on each distance, as well as the number of responding producers. These numbers are calculated for 2003, 2008, and what is expected in 2013. The 2013 expected values are then calculated by region and herd size for comparison.

Referring to the Table 5.4, 58.24% of producers are selling calves less than 50 miles from their operation, while 20.22% are selling calves 51 to 100 miles from the operation. Producers selling 100 miles or more from the ranch account for only 7.25% of producers while the remaining 14.29% of producers fell into the mixed distance category. This is similar across all regions. Generally speaking, distance from ranch to market increases with herd size. Figure 2.4 indicates that herds with 1 to 24 head have almost no sales more than 100 miles from the ranch (1.09%), while herd sizes of 500 to 999 head have a majority of sales occurring 100 miles or more from the ranch (44.44%). Sales 51

to 100 miles from the ranch slowly increase with herd size. The mixed group also slowly increases with increasing herd size. The transition to further sale locations could come along with the economies of scale offered by larger operations. The transportation costs per head could be smaller or shared in this case.

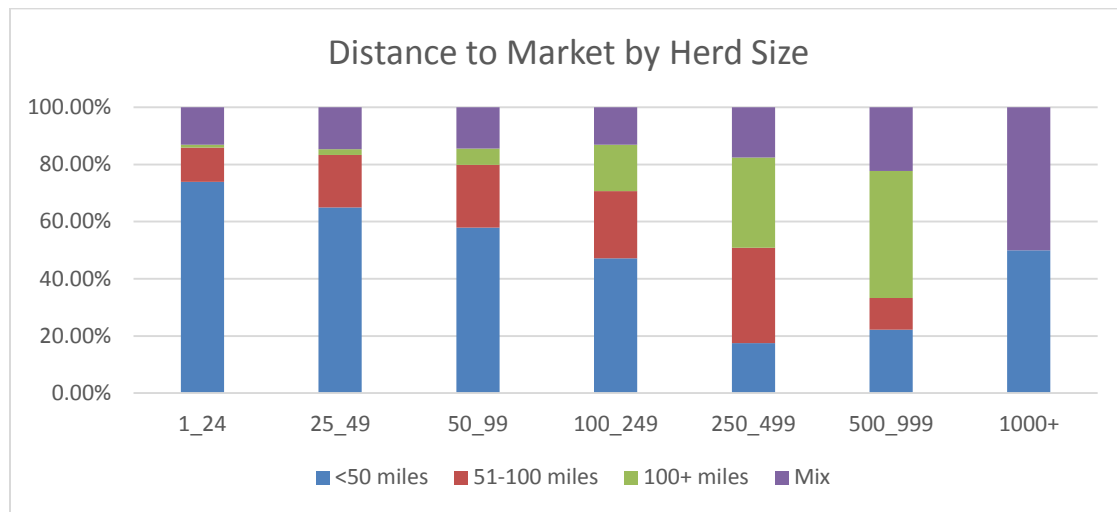


Figure 2.4: Distance to Market by Herd Size

Referring to Table 5.5, the yearly overall responses reveal near the same story. The largest number of producers sell less than 50 miles from their ranch with the highest average percentage of calves sold, while selling more than 100 miles from the ranch was least popular, with the lowest percentages of calves sold. There was not much variation across years. The Northwest had the highest percentage of calves sold less than 50 miles from the ranch (95.65%), while the Northeast listed the lowest (88.64%). The Panhandle listed the lowest average percentage of calf crop sold 51-100 miles from the ranch (46.00%) as well as greater than 100 miles from the ranch (52.50%). Otherwise, most responses were relatively similar across regions. Excluding herd sizes of 500-999 and 1000 or more, average percent of calf crop sold less than 50 miles from the ranch decreases with increasing herd size. Producers responded more frequently to selling

greater than 100 miles from the operation as herd size increased. For herd sizes of 250-499, a majority of respondents were selling an average of 85.26% of their calf crop 100 miles or more from the ranch. A majority of producers (3) with a herd size of 500-999 sold 100% of their calf crop more than 100 miles from the ranch.

2.3 PRACTICE ADOPTION

Thirteen management and marketing practices from the survey are examined here. Practices can be categorized into: basic, preconditioning, marketing, and record keeping practices. Castration, dehorning, and deworming are pre-weaning practices included in the basic category. Administering respiratory vaccinations, 45-day weaning, and feed bunk training form the preconditioning practices category and are commonly bundled with the basic practices in typical preconditioning programs to improve health and profitability after leaving the ranch. Implanting, age and source verifying, and keeping cattle antibiotic-free are the practices included in the marketing category and are commonly implemented in order to receive market premiums or market as part of a specific program. Recording calves' birth dates, keeping medical treatment records, keeping vaccination records, and individually identifying calves make up the record keeping category. These practices can impact the overall success of a cow-calf operation as they impact and enhance decision-making.

Preconditioning is a term used to describe a bundle of management practices that producers can implement on the ranch to prepare calves to perform well in a stocker or feedlot setting. The typical preconditioning bundle includes the basic and preconditioning categories listed above. Although presumably healthy when leaving the ranch, stress and disease exposure encountered during the shipping and receiving process can take a toll on

calves and, in turn, profits. Research indicates that preconditioning programs reduce sickness, death, as well as costs associated with each (Lalman and Mourer, 2014; Ward and Lalman, 2003). Cow-calf producers have been exposed to the extension push for preconditioning. However, as Dhuyvetter, Bryant, and Blasi (2005) stated, research is often contradictory in nature when it comes to discovered premiums for these management decisions, not to mention variability in operations. Producers may be skeptical of implementation costs for value-added management practices when they perceive market premium variability.

Williams, et al. (2014), found that the probability of receiving a premium for a lot of cattle usually directly reflects the number of value-adding practices adopted by the producer when examining weaning, vaccination, dehorning, and certification. Typically, as herd size increases, the number of practices adopted follows. Along with premiums increasing, the percent likelihood of such premiums also increases with additional practice adoption. Often, the benefits of these practices are more realized in a bundle. An example of a bundled program is the Vac-45, OQBN certified program that has shown returns from \$57.76/head (Williams, et al., 2014). Table 2.2 below displays the premiums per hundred pounds found for each practice at auction.

The Practice Adoption Rates section of the Beef Management and Marketing Survey shows that only a fraction of Oklahoma survey respondents utilize preconditioning practices and other defined calf management and marketing practices. The most utilized practices are castration (73.7%), deworming (62.6%), dehorning (50.1%), bunk training (49.7%) and 45 day weaning (40.8%) (Table 5.6). Ward and Lalman also found that the value of preconditioned cattle was valued at an additional

\$5.25/cwt to feedlot owners in 2003. In contrast, producers administering no antibiotics, presumably a conscious marketing choice, only accounted for 11.7% of the total sample population. There are numerous reasons a producer may or may not adopt practices. Producers were asked to cite which specific constraints (Table 5.8) and incentives (5.7) discourage or encourage specific practice adoption. General producer knowledge about specific practices were also solicited (Table 5.9).

Table 2.2: Premiums/Discounts for Various Preconditioning Practices

Practice	Premium (\$/cwt)	Data Year	Sources
Castrated (Discount for bulls)	-5.77	2010	Williams et al., 2012
Dehorned (Discount for horns)	-0.90 -3.15 6.49 (premium)	2009 2010 2010	Zimmerman et al., 2012 Williams et al., 2012 Williams et al., 2014
Weaned	3 to 5	2009-2010	Zimmerman et al., 2012
Vaccinated (non-weaned) ^a	1.44 5.48 5.26	2010 2010 2012	Zimmerman et al., 2012 Williams et al., 2014 Lalman and Mourer, 2014
VAC45 (weaned) ^b	3.17 12.98 12.06	2010 2010 2012	Zimmerman et al., 2012 Williams et al., 2014 Lalman and Mourer, 2014
Implanted	0.61	2009	Zimmerman et al., 2012
Age and Source Verified	1.59-1.67 0.95	2009-2010 2010	Zimmerman et al., 2012 Williams et al., 2012

^a two rounds respiratory vaccinations

^b first and second round vaccinated against: IBR and PI3, BVD and BRSV, Clostridial 7-way; one round parasite control (first round at or prior to weaning, booster at weaning or prior to delivery, weaned 45+ days prior to shipping)

2.3.1 Basic Pre-Weaning Practices

2.3.1.1 Castrate Bull Calves Prior to Marketing

Castration is the process of removing the testicles from a bull calf by way of incision or banding (restricting blood flow to the testicles). Steers have more desirable meat qualities to the consumer (more fat, less tough) and are also the safer choice to keep around than bulls. It is better to castrate calves at a young age, as it results in less stress than would occur at the feedlot level (SDSU, 2016). Uncastrated bull calves typically receive large discounts at auction, estimated at \$5.77/cwt by Williams et al. (2012) (Table 2.2).

Castration has the highest adoption rate among practices surveyed (73.70%). By region, the Southeast lags slightly in castration adoption (68.32%) compared to other regions. Overall, the west has a higher rate of castration adoption than the east, while the Panhandle leads in adoption (94.74%). Castration adoption rates steadily increase with herd size, with the exception of herd sizes of 500 to 999 (75.00%). Just 62.78% of producers in herd sizes of 1-24 head castrate, while 100% do in herd sizes of 1000 head or more.

The most cited incentive that producers list for castrating calves is that buyers are willing to pay a premium for it (65.37%). Also commonly cited are increased weight gain on the ranch (46.48%), increases performance at the stocker/feedlot level (24.13%), increased beef quality at consumer level (22.14%), improved reputation with buyers (21.09%), and no third party certification required (19.73%). The remaining incentives were cited by less than 10% of producers each.

The most commonly cited constraints to castrating calves were: have not done it in the past and have done okay (15.29%), requires too much labor (12.94%), and buyers do not pay enough premium to cover the cost (10.59%). The remaining constraints were cited by less than 10% of producers each. The two least cited constraints were “thought about it but need help with specifics of how to implement it on my ranch” (0.88%) and “do not know where/how to market these cattle” (0.46%). Of the producer knowledge questions, marketing calves to sellers based on this practice was the most common (78.82%). 33.82% of producers are familiar with the practice but do not use it on their ranch and 28.82% castrate but do not know how to use it in marketing cattle. Surprisingly, 11.76% of surveyed producers claimed they were not familiar with the practice at all.

2.3.1.2 Dehorning

Dehorning is the practice of removing the horns in order to make the cattle easier to handle and less likely to harm each other in confined spaces. This can also be accomplished through the use of polled breeding stock (Anderson, 2010). Ward and Lalman (2003) found dehorning as part of a preconditioning program to result in profits for producers. Discounts for horned cattle have been found to range from \$0.90/cwt to over \$3/cwt (Zimmerman et al., 2012, Williams et al., 2012). Williams et al. (2014) estimated a \$6.49/cwt premium for polled cattle (Table 2.2). Dehorning horned calves prior to marketing was found to have a positive net return between 56-59% of the time (Williams, et al., 2014).

The adoption rate for dehorning is 50.1%. It is possible that some producers may not have marked implementation of dehorning due to operating a polled herd. The

Southeast (43.7%) has the lowest adoption rate for dehorning, while the Panhandle has the highest adoption rate (68.4%). Overall, more producers in the west reported dehorning their calves. Adoption of dehorning increases with herd size with the exception of herds with 599 to 999 head (62.5%). Only 33.89% of producers dehorn calves in herd sizes of 1-24 head while 100% of producers with 1000 head or more reported dehorning.

Considering incentives to adopt, 72.07% of producers who dehorn cited that buyers are willing to pay a premium for dehorning. Additional incentives cited often include: lessens incidence of illnesses or injury in calves (24.38%), increased weight gain while on the ranch (22.69%), improves reputation with buyers (22.69%), and increases performance at the stocker/feedlot level (20.99%). Interestingly, 10% of producers who dehorn also felt that dehorning increases the quality of beef at the consumer level. Lastly, 16.2% of producers cited that castration not requiring third party certification was an incentive to adopt the practice.

The most commonly cited constraint to dehorning from producers who do not dehorn prior to marketing was “have not done it in the past and have done okay” (8.37%). Other constraints were: requires too much labor (6.36%) and did not have enough calves to mess with it (5.89%). The producer knowledge questions surprisingly showed that just over 5% of producers claimed they were not familiar with dehorning, while 78.82% say they market calves to sellers based on this practice.

2.3.1.3 Deworming

Deworming is the removal of parasites by way of pour-on or injection in order to reduce internal parasites and prevent reduced performance and low daily gain (Gould, 2011). Deworming is usually seen used in addition to other practices or preconditioning

protocols, as the cattle are already being put through a chute for other purposes such as vaccination and/or castration.

The overall adoption rate for deworming is nearly two-thirds of producers, at 62.6%. Producers in the Northwest have the highest adoption rate (70.8%), while the Southeast adoption rates lag at 58.4%. Adoption of deworming calves increases steadily with herd size, with the exception of herd sizes of 500 to 999. Herd sizes of 1000 head or more cited deworming 100% of the time, while only 48.89% of producers with 1-24 head in the herd said they dewormed calves.

The most cited reason for deworming was increased weight gain while on the ranch (70.86%). Other commonly cited incentives were: lessens incidence of illnesses or injury in calves (26.17%), buyers willing to pay a premium (31.23%), and increases performance at the stocker/feedlot level (25.68%). Improved reputation with buyers (19.51%), increased beef quality at consumer level (15.93%), and no third party certification (17.78) were also identified as incentives to deworm calves.

Non-adopting producers cited the most prevalent constraint to deworming was “have not done it in the past and have done okay” (12.84%). Other identified constraints were: buyers do not pay enough premium to cover the cost (6.83%), requires too much labor (6.42%), and buyers do not pay any premium for it (5.18%). The remaining constraints were cited less than 5% each. When soliciting producer knowledge of deworming, the two most cited were that producers market calves to sellers based on this practice (45.96%) and they use the practice but do not know how to use it in marketing cattle (24.22%). Slightly under 10% of producers listed that they are not familiar with the practice at all.

2.3.2 Preconditioning Practices

2.3.2.1. Calves Weaned 45 Days Prior to Marketing

Weaning is the process of separating calves from their dams to prevent any further suckling. It is beneficial to wean prior to marketing due to the high stress of separation as well as the later stress of transportation, comingling, etc. at time of sale (Lalman and Mourer, 2014; Potter, 2010). Weaning is also necessary for other preconditioning practices, such as bunk training, to occur. According to Williams et al. (2014), weaning for a minimum of 30 days prior to marketing calves results in a \$24.62 to \$39.84 per head premium 60-64% of the time. Zimmerman et al. (2012) found a \$3-5/cwt premium for weaning (Table 2.2).

The overall adoption rate for 45 day weaning prior to marketing is less than half of the sampled cow-calf operations. By region, the Panhandle is the leader in adoption (57.9%) while the Southeast lags behind (34.5%). Generally speaking, a higher percentage of producers in the western regions of the state wean calves for 45 days prior to marketing than those in eastern regions.

Adoption rate of 45 day weaning by herd size steadily increases up to 250 to 499 head. There is a large difference in 45 day weaning adoption rates by herd size, with only 28.33% of operations with 1-24 head weaning 45 days compared to 71.70% of herds with 250-499 head.

As with castration and dehorning, the most cited incentive for 45 day weaning is the premium associated with it (63.2%). A high percentage of producers also listed the added benefits of: weight gain (33.0%), improved reputation with buyers (27.7%), increased performance at the stocker/feedlot level (32.26%), and no third party

certification requirement (28.27%). Slightly less important are the lessened incidence of illnesses or injury in the calves (16.7%), and increased beef quality at the consumer level (14.61%).

The most common constraints identified by producers who do not wean for 45 days prior to marketing were that they have not used it in the past and have done okay (13.97%), and that buyers do not pay enough of a premium to cover the cost of implementation (12.27%). The two highest cited producer knowledge responses were that they were familiar with the practice but did not use it on their ranch (25.43%) and that they market calves to sellers based on the practice (20.23%).

2.3.2.2 Two Rounds of Respiratory Vaccinations

Vaccination is the process of administering vaccines to induce active immunity for disease resistance (Lalman and Mourer, 2014). Vaccines are most effective if the immunity is induced before disease has time to take hold, also meaning it is more beneficial to vaccinate prior to the stress of weaning or shipping. There are many different vaccination regimes to follow and most certified programs require weaning as well. Table 2.2 shows that the VAC45 regime is the most profitable at just above \$12/cwt. However, VAC45 protocols include vaccinations used in conjunction with weaning, both certified. Vaccinations alone, sans certification, are estimated to result in a \$1.44-5.48/cwt premium (Table 2.2). Vaccination has been observed as the most profitable practice, bringing in \$17.17 to \$30.18/head premium per head around 60% of the time (Williams, et al., 2014).

The overall adoption rate for administering two rounds of respiratory vaccinations is 34.9%, which is slightly over one-third of producers who responded to the survey. By

region, the Panhandle leads in adoption (57.9%), while the Southeast lags (31.4%), followed closely by the Northeast (32.9%). Adoption increases with herd size, peaking at 75.5% for herds of 250 to 499 head. By contrast, only 25.0% of herds having 1-24 head administer two rounds of respiratory vaccinations prior to marketing.

Not surprisingly, producers listed lessened incidence of calf illness most often as an incentive to administer vaccinations on the ranch (53.44%). Another highly cited incentive was the added benefit of buyers paying a premium for vaccinated calves (48.56%). Other commonly cited incentives included: increased weight gain on the ranch (31.93%), improved reputation with buyers (30.6%), increased performance at stocker/feedlot level (28.82%), no third party certification required (25.28%), and increased quality of beef at consumer level (16.41%). The remaining incentives had less than 6% of producer references each.

The highest cited constraint to adoption of two rounds of respiratory vaccinations was that they have not done it in the past and have done okay (18.41%). Other commonly cited constraints included “requires too much labor” (8.55%) and “buyers do not pay enough premium to cover the cost” (7.72%). The remaining constraints were cited less than 5% each, with lender financing and other cattlemen’s failures being of the least concern. Producer knowledge question responses indicate that 29.93% were familiar with vaccinating but did not use it on their ranch and 14.01% market calves to sellers based on the practice.

2.3.2.3 Bunk Training

Bunk training is the practice of acclimating newly weaned calves to eating out of a feed bunk. Bunk training prior to marketing can reduce stress as well as promote

quicker gain upon arrival at the feedlot and is typically used in conjunction with a weaning program. Interestingly, bunk training has a higher overall adoption rate (49.65%) than weaning (40.76%), suggesting that some producers put out feed bunks without separating the calves from their dams.

Overall adoption of bunk training is approximately half of producers (49.65%). The Panhandle exceeds the overall rate for bunk training and has the highest adoption rate (57.89%), while the Southwest has the lowest adoption rate (44.06%). Slightly more producers in the north bunk train compared to the south. The adoption rate for bunk training increases steadily by herd size with the exception of herd size 500 to 999 (50.00%). Bunk training adoption ranges from 39.44% in herds of 1-24 head to 100% in herds with 1000 head or more.

Producers listed increased weight gain while on the ranch (61.53%) most often as incentive for adopting bunk training. Other incentives were: buyer premiums offered (36.14%), increased performance at the stocker/feedlot level (33.80%), improved reputation with buyers (22.12%) and no third party certification required (18.85%). Lessening of illnesses or injury in calves (13.40%) and increased beef quality at the consumer level (12.93%) were also indicated as incentives.

Non-adopters cited constraints to bunk training calves as: have not done it in the past and have done okay (10.91%), buyers do not pay enough premium to cover the cost (6.30%) and buyers do not pay any premium for it (6.14%). There were zero producers citing that they do not know where or how to market bunk trained calves. All remaining constraints were cited by less than 5% of producers. Overall, approximately one quarter

of producers (23.50%) were familiar with the practice but do not use it on the ranch, while 28.26% market calves to sellers based on bunk training.

2.3.3. Marketing Practices

2.3.3.1 Implants

Implanting is the practice of inserting growth stimulant capsules into ear tissue, interacting with hormones in the body to promote weight gain by improving feed efficiency. The capsules release some naturally occurring and some synthetic hormones slowly over a period of time, stimulating growth. The estimated growth of implanted stocker calves was 10-20% more than non-implanted calves (Stewart, 2013). Implants usually accompany other practices such as deworming, vaccination, and other management practices that require putting the calves into a chute. Table 2.2 shows that there was no discount found for implanted cattle.

Overall adoption of implanting is approximately one fourth of all producers (26.14%). The Northwest (39.58%) is by far the most progressive region in the case of implanting, while the Northeast (17.59%) has the least adoptive rate. Generally, the west is more adoptive of implants than the east. Implanting becomes more common with increasing herd size, once again with the exception of herd sizes of 500 to 999 (37.50%). There is a large disparity between adoption in herd sizes of 1-24 head (17.22%) and 250-499 head (49.06%). The adoption of implants increased nearly 15% between herd sizes of 50-99 and 100-249 head. Adoption rate was 100% for herds of 1000 head or more, indicating both respondents in this size adopted.

A high majority of those using implants cited weight gain on the ranch as an incentive (79.59%), which is expected since implant use is directly related to weight gain.

Other commonly cited incentives were: increased performance at the stocker/feedlot level (23.37%), buyer premiums (19.82%), no third party certification (17.16%), and improved reputation with buyers (13.61%). All other incentives were cited by less than 10% of producers.

Non-adopters of implanting identify constraints to adoption as: have not done it in the past and have done okay (12.77%) and requires too much labor (6.18%). All other constraints were cited by less than 5% of producers. General measures of producer knowledge of implanting indicate that 43.56% of producers were familiar with the practice but did not implement it on the ranch. Just above 10% of producers said they were not familiar with implanting.

2.3.3.2 Use No Antibiotics

Antibiotics are used to treat, prevent, and control disease in the herd, therefore increasing productivity. There is a growing concern for disease resistance to these antibiotics, driving the elimination of antibiotics both in feed and in cases of infection. The USDA's Food Safety and Inspection Service (FSIS) is in charge of monitoring meat sources to verify labelling claims such as "raised without antibiotics", "organic", etc. (Sneeringer, 2015). This is primarily a marketing decision rather than a preconditioning practice.

Only 11.7% of surveyed producers claim to have an antibiotic-free herd. In fact, this is the least adopted practice among survey respondents. Adoption increases with herd size, maxing at herds of 100 to 249 head (16.46%), then decreases with herd size. Neither herd of 1000 head or more is antibiotic free (0%). The Panhandle (26.3%) has the most producers identifying as antibiotic-free, while the Northeast (11.3%) has the fewest. All

regions, with the exception of the Panhandle, are adopted by between 10% and 13% of producers. This is the least adopted practice across the board.

Producers' most popularly cited incentive to use no antibiotics was that buyers are willing to pay a premium (31.13%). Other commonly cited incentives were: increased beef quality at the consumer level (26.49%), lessened incidence of illness or injury in calves (22.52%), improved reputation with buyers (21.19%), and no third party certification (20.53%). Interestingly, it seems unlikely that the absence of antibiotics would decrease the incidence of illness or injury in calves. Additionally, third party certification is likely required in the case of buyer premiums being given for the non-use of antibiotics, as it is not observable at the point of sale.

Producers without antibiotic-free herds seemingly do not have strong feelings about constraints. All constraints were cited by less than 6% of producers each. The highest constraint to adoption was "have not done it in the past and have done okay" (5.69%). Buyers not paying any premium (3.06%) and buyers not paying enough premium to cover the cost (3.15%) were also cited. Financing concerns were of minimal concern. Producer knowledge questions indicate that 23.20% of producers say they are familiar with antibiotic-free herds, but not using it on the ranch while 7.36% cite non-familiarity with the practice. The remaining questions were cited less than 5% each.

2.3.3.3 Age and Source Verification

USDA Age and source protocols include the Process Verified Program (PVP) and Quality System Assessment (QSA). Both programs include continuous USDA auditing and go beyond providing a signed affidavit. Once USDA Process Verified, calves meet QSA requirements for export verification. Age and source verification aims to assure

customers of the origin and quality of their products and benefits feeders and processors by allowing export opportunities (Hall, 2008). Age and source verification is also utilized upon disease outbreak, due to the tracing capability. Premiums up to 1.67/cwt are reported in Table 2.2.

Only 15.2% of surveyed producers age and source verify calves. The Panhandle is again the adoption leader at 36.8%. Other regions were lower but similar to each other in adoption rates, ranging from 13-18%. Herd sizes of 1-24 head had 10.56% of producers adopting. Adoption increased steadily with herd size from here, maxing at 35.85% for herds of 250-499 head. Only 12.50% of producers with herds having 500-999 head source and age verify calves. Neither producer with a herd of 1000 head or more adopted age and source verification.

The most cited incentives for adopting age and source verification were: buyers are willing to pay a premium (47.96%) and improved reputation with buyers (41.33%). Other commonly cited incentives were, interestingly: no third party certification requirement (22.96), increased weight gain while on the ranch (21.43%), increased performance at the stocker/feedlot level (12.24%), and increased quality of beef at the consumer level (11.22%). Although producer percentages are small, signed affidavit required (6.63%), third party verification required (5.10%), and part of a QSA or PVP program (8.67%) were cited by more producers than with any other practice. These measures are understandably higher here because age and source verification does require third party (USDA) verification and is a QSA or PVP program (Hall, 2008).

The most commonly cited constraint across practices is yet again the most cited for age and source verification with 9.39% of producers indicating that they “have not

done in the past and have done okay”. Slightly fewer producers (8.20%) cited they do not really know what age and source verification requires or what value it adds. All other constraints were cited by less than 6% of producers. One-third (32.54%) of producers are familiar with age and source verification but do not use it on the ranch, while 13.95% of producers cited they are not familiar with the practice.

2.3.4. Record Keeping Practices

2.3.4.1. Vaccination Records

Documentation of dates and products for all vaccinations given can inform future management decisions. Production records are essential to monitor individual animal performance as well as whole herd productivity on a year to year basis (Waters, 2012). If calves are vaccinated, recording is a minor additional step. Vaccination records are also required for certified preconditioning programs. They may not seem important if not used in marketing, but can be valuable to future management decision-making.

Nearly 35% of surveyed producers reported vaccinating calves, but only 26% of producers reported keeping records of vaccinations. By region, the Panhandle leads in vaccination record keeping (47.37%), with the Northwest (23.96%) and Southeast (24.11%) being least adoptive. Herds of 250-499 head were most likely to keep vaccination records (54.72%), while herds of 1000 head or more (0%) and 25 to 49 head (20.68%) were least adoptive.

Producers cited strong incentives to keep vaccination records as improved reputation with buyers (38.51%) and that buyers are willing to pay a premium (34.93%). Other commonly cited incentives include: increased weight gain while on the ranch (27.76%), lessens incidence of illnesses or injury in calves (25.67%), and no third party

certification (18.21%). The remaining incentives were all cited by less than 15% of producers each.

A constraint commonly cited across practices, “have not done it in the past and have done okay”, was the top cited constraint to vaccination record-keeping (9.08%). All other constraints were cited by less than 5% of producers each, with “requires too much labor” (4.18%) and “buyers do not pay any premium for it” (4.18%) being cited. The most cited responses to the producer knowledge/familiarity questions were: marketing calves to sellers based on keeping vaccination records (36.33%) and being familiar with the practice but not using it on their ranch (27.77%). The other two questions were cited by less than 10% of producers each.

2.3.4.2. Medical Treatment Records

Medical treatment records involve documenting dates and type of all medical treatments given to the animals. As with vaccination records, keeping medical treatment records can also help manage health costs (Waters, 2012). Although a direct value cannot be assigned to record keeping, the worth in way of management assistance is key. These management decisions then have the capability to be capitalized on.

Overall, only 21.3% of producers keep medical records, which is slightly less than those keeping vaccination records (25.9%). All regions, with the exception of the Panhandle (52.6%), have adoption rates in the range of 19-23%. Adoption increases with herd size, with the exception of herds with 25-49 head (17.28%) and 1000 head or more (0%). Otherwise, the range is slightly increasing from 19.44% (1-24 head) to 50% (500-999 head).

Improved reputation with buyers (37.32%) is the most cited incentive to keep medical records. Buyers willing to pay premiums (31.16%), lessens incidence of illnesses or injury in calves (28.62%), and increased weight gain while on the ranch (27.54%) were also commonly cited. All other incentives were cited by less than 15% of producers each.

Again, “have not done in the past and have done okay” was the most cited constraint to keeping medical records (9.44%). Requiring too much labor (4.82%) and buyers not paying a premium for it (3.93%) were also cited. Familiarity with medical record keeping but not using it on their operation was, by far, the most commonly cited response (28.81%). All others were cited by less than 10% of producers.

2.3.4.3. Birth Records

Birth records for calves are simple to keep, yet hands on. Calving dates can show herd productivity on an annual basis and can be useful when selecting replacement heifers. Recording birth and weaning weights of calves can also aid in future management decisions (Waters, 2012).

Overall, 24.4% of producers claim they keep birth records of calves. This is approximately the same percentage that keep vaccination and medical records. Aside from the Panhandle (42.1%), all regions adopt at similar rates, ranging from 21-26%. Herd sizes of over 1000 head report not keeping birth records at all (0%), while 33.96% of herd sizes with 250-499 head report keeping birth records.

The highest cited incentives for keeping birth records include: improved reputation with buyers (37.46%), buyers are willing to pay a premium (36.19%), and, interestingly, increased weight gain while on the ranch (35.87%). No third party

certification required (15.87%), increased performance at the stocker/feedlot level (11.75%), and lessens the incidence of illnesses or injury in calves (11.11%) were all cited greater than 10% as well. The remaining incentives were cited by less than 10% of producers each.

When asked about constraints to keeping birth records, 8.90% of producers claim they have not kept birthdate records in the past and have done fine. All constraint responses were under 10% of all producers for this practice. High labor requirements were cited by 6.54% of producers and 4.60% said buyers do not pay any premium for it. All remaining constraints were cited by less than 4% of producers each. Producer knowledge questions reveal that 13.8% use the practice but do not know how to use it in marketing and 13.8% actually market calves to sellers based on this practice. No producers marked that they are familiar with the practice but do not use it on their ranch. Nearly 5% of producers claimed they are not familiar with this practice.

2.3.4.4. Individual Identification

Individual calf identification usually refers to assigning a numbered ear tag to each individual calf, but can be done in other ways. Overall, 18.8% of surveyed producers individually identify calves. The Panhandle leads in adoption with 36.8% of producers individually identifying calves. All other regions are fairly equal, ranging from 15-22%. The percentage of producers who individually identify calves increases with increasing herd size, with the exception of herd sizes with 1000 head or more (0%). Adoption rates range from 13.33% (1-24 head) to 50% (500-999 head).

Two main incentives for individual calf identification were: improved reputation with buyers (41.98%) and that buyers are willing to pay a premium (39.09%). Other cited

incentives included: increased weight gain on the ranch (27.57%), no third party certification (18.11%), lessened incidence of illnesses or injury in calves (13.17%), and increased performance at the stocker/feedlot level (11.93%). The remaining incentives were cited by less than 10% of producers.

Similar to other practices, producers who do not individually identify calves most often cited “have not done in the past and have done okay” as a constraint to adoption (8.86%). Also, 8% of producers indicated that individual identification requires too much labor. All other constraints were cited by less than 5% of producers each. Producers indicated familiarity without implementing individual identification on the ranch 28.48% of the time. Approximately 6% of producers claimed they were not familiar with the practice.

2.3.5. Summary of Practice Adoption

The survey asked producers questions related to thirteen calf management and marketing practices. These practices can be characterized as one of four types: basic, preconditioning, marketing, or record keeping practices. Overall, basic and preconditioning practices had the highest adoption rates, though there is still room for improvement. Producers were asked to report all incentives that entice adoption when they adopt as well as constraints that keep them from adopting when they do not. The incentives and constraints to adoption can help target educational programming according to what is important to farmers and what is holding back non-adopters to fix the issues.

The most often cited incentive for practice adoption (castration, dehorning, 45 day wean, no antibiotics, vaccination records, and age and source verification) was that buyers are willing to pay a premium. Although profits are always cited high on the list,

many producers marked utilization of practices such as deworming, bunk training, and implants because of increased weight gain while on the ranch. Increased weight gain is a high incentive for preconditioning and marketing practices. Lessening incidence of illnesses or injury in the calves was most often listed as incentive to vaccinate, which is expected, and generally leads to higher profit via lower morbidity rates. Lastly, the record keeping practices are all largely seen as ways to improve reputation with buyers, but have relatively low adoption rates.

For most health-related practices, producers realize that buyers are willing to pay a premium. However, producers not knowing what these practices are or what they entail is an aspect that requires extension attention. Producers cannot be expected to adopt these practices until they are familiar with the purpose and method.

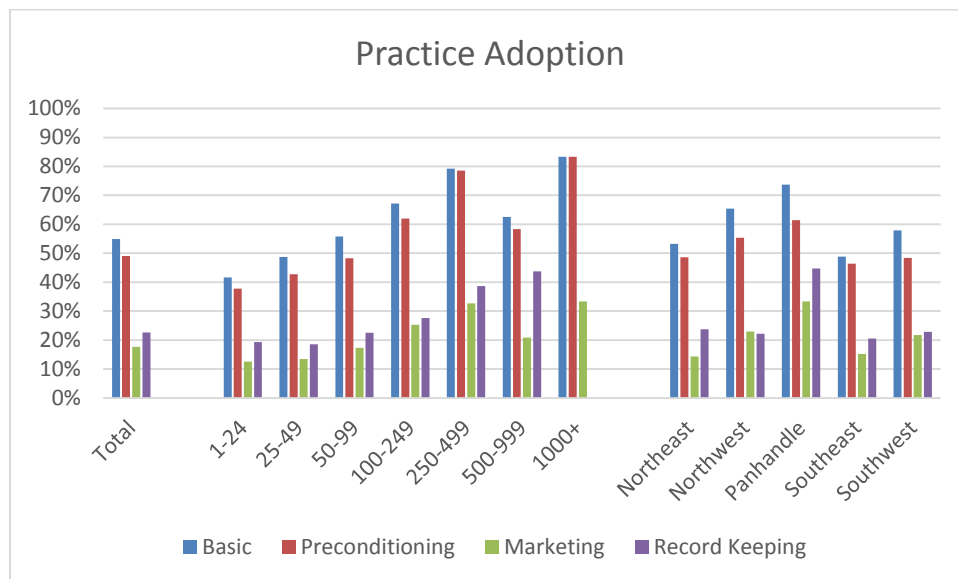


Figure 2.5: Practice Adoption Summary

On average, the basic practices have the highest adoption rates, with the preconditioning bundle is adopted slightly lagging. Both record keeping and management practices are less adopted, observed in Figure 2.5. Adoption increases with herd size,

with the exception of herds 500-999 head, probably due to low response rate. The North is more adoptive than the South and the Panhandle always leads in adoption.

For producers who do not implement practices, the most frequently cited constraint is always “have not done in the past and have done okay”. This implies that producers may simply be stuck in their ways because they perceive it has worked in the past. This is also an educational issue in that producers hesitant to adopt may get left behind in this changing marketplace. Farmers also have labor concerns, with “requires too much labor” consistently being cited as a constraint across practices. Non-adopting producers also heavily cited buyers not paying any or not paying enough premium for various practices.

The Panhandle leads in preconditioning adoption rates, though it also has a relatively small (19) number of respondents. Closely following in adoption rates is the Northwest. Generally speaking, adoption rates for most practices tend to be higher in the western half of the state than in the eastern half of the state. The most adoptive herd size tends to be herds of 250-499 head and there is most always a small dip in practice adoption for herd sizes of 500-999 head. This could be due to the low amount of producers responding from this category. Similarly, herds of 1000 head or more were very hit or miss because of the few responses from this herd size. With the sparse responses of larger herd sizes in mind, generally speaking, practice adoption increases with herd size.

Producers were also asked to identify producer knowledge questions regarding management and marketing practices. Overwhelmingly, producers responded that they were familiar with the practice, but simply do not use it on their ranch. This was the case

for: weaning, vaccination, implants, no antibiotics, medical records, individual calf IDs, and age and source verification. The other practices (calf birth date records, vaccination records, bunk training, deworming, dehorning, and castration) were listed as predominantly marketing calves to sellers based on the practice.

2.3.6. Participation in special marketing programs

Producers were asked about participation in marketing programs through an animal health company, breed association, USDA PVP or an umbrella program. The average listed for 2008 was 76% of total calf crop enrollment, representing around 4% of producers. Producers were optimistic with 2013 projections, which show that near 7% of total producers would like to market 79.6% of their calves through one of these special marketing programs. If producers did not market calves through a special program (a majority), they were asked to rank the top three reasons why.

Rankings were weighted, with a rank of 1 having the highest weight, and then divided by the total number of survey responses to show relative importance (Table 2.3). The highest ranked deterrent was producers not knowing where or how to find the specified programs or sales to market these value-added cattle. The lack of nearby markets in which to sell value-added calves was also a highly rated deterrent. Producers also reported unwillingness to make a long term commitment and reduced flexibility in marketing as highly ranked deterrents to participation in special marketing programs. Overall, sale date convenience and company program sponsorship were not large factors in special marketing program participation.

Table 2.3: Deterrents from Listed Management and Marketing Practices

Weighted Average Rankings	
0.386	Don't know where/how to find programs or sales that market value-added cattle
0.359	Lack of nearby market that distinguishes value-added calves or offers a special sale
0.340	Don't want to make a long term commitment
0.337	Can get just as much for my calves without the program
0.303	Reduces flexibility in marketing my cattle
0.251	Buyers know the value of my calves without using a program
0.223	Don't want to be tied to a specific company
0.121	Would consider it if I could use a program that isn't tied to a specific company
0.107	Program sale dates don't match up with my weaning program

2.3.7. Information Sources on Management and Marketing

Producers were asked how often they sought information from various sources in the last 12 months for information regarding marketing opportunities for their cattle, displayed in Table 5.10. It is important to note that the combined Oklahoma State University Sources row shows the cumulative percent over all sources. Thus, this could be the same producers responding to each source. The top sources utilized more than twice over the course of a year included: other cattlemen (36.58%), veterinarian (19.88%), trade magazine (16.55%), and livestock market manager/staff (15%). Combined OSU sources could also apply to this, representing a cumulative 30% of sources sought out more than twice over a year.

Table 2.4: Useful Information Sources

Weighted Average Rankings	
1.302	Newsletters
0.753	County Meetings
0.727	OSU Fact Sheets
0.434	E-mails
0.356	Ranch Demonstrations
0.117	Webinars
0.018	Podcasts

Producers were asked to identify which resources would be most helpful with value added marketing in cattle. These rankings were converted to the weighted averages displayed in Table 2.4. Producers ranked newsletters, county meetings, and Oklahoma State University Fact Sheets as the most helpful and desired information sources. Podcasts and webinars were rarely ranked, possibly representing the technology lag in agriculture. However, technology has developed immensely since the survey was distributed and may have more of an impact on information acquisition today.

2.4. PRODUCER DEMOGRAPHICS

Demographics of producers responding to the Beef Management and Marketing Survey are summarized here. Trends can be used to describe the “typical” Oklahoma cow-calf operation. A demographic summary can be found in Table 5.11. Note that the survey did not account for ages, years of experience, or other demographics of individuals next in line to take over the operation, which could be useful information to gather in future surveys.

2.4.1. Years in Cattle Business

No survey respondents had less than five years of experience. Experience highly relies on producer age, the distribution of which is consistent with previous studies on the

aging population of agricultural operation manager/owners (USDA, 2012). A majority of the sample population (67.9%) had greater than 25 years of experience.

Regionally, the Panhandle (84.21%) and the Southwest have the highest percentage of producers with more than 25 years of experience. The few producers with 5 to 15 years of experience are found more in the west, while the slightly more experienced producers with 16-25 years of experience are found more in the east. The percent of producers with greater than 25 years of experience generally increases with increasing herd sizes. Herd sizes of 500-999 either had 5 to 15 years of experience (12.5%) or greater than 25 (87.5%).

2.4.2. Age

Respondents were primarily 51 to 64 years old (40.37%) or older than 65 (42%). This is consistent with the 2012 Census of Agriculture, which showed that the average age of U.S. farmers is 58.3 years, which increased from 2007 (Grant, 2014). Only 4 producers (0.31%) were younger than 30 years old. The Census found that the number of beginning farmers who are principal operators such as these, has declined 19.6% (Grant, 2014). There is not much variation in age distribution by region and herd size. This says simply that the ranching population is aging.

2.4.3. Education

A majority of producers have only a high school diploma (35.1%) or a bachelor's degree (23.82%). Only 19.8% had a graduate degree, while 17.63% had a vocational degree and 4.25% had less than a high school diploma. In every region, high school is the most common extent of education. The western regions including the Panhandle have the

highest proportion of bachelor's degrees, ranging from 27-32%. The Southeast has the largest percent of producers with graduate education.

Education level tends to increase with herd size. The highest percentage of graduate education was in herd sizes 250 to 499 (22.64%) and 500 to 999 (25%) head. Herd sizes of 1 to 24 (12.78%) and 500 to 999 (0%) have below average percent of producers with a bachelor's degree.

2.4.4. Membership/Training

Producers were asked if they had completed Beef Quality Assurance (BQA) training and if they were current or expectant graduates of OSU's Master Cattleman program. Only 7.11% overall indicated BQA training and 3.66% claimed Master Cattleman participation. The Southeast (7.09%) had higher participation rates in BQA training while the Northwest (5.73%) was the lowest. Master Cattleman participation was also higher in the Southeast (4.96%) and lowest in the Northwest (0.52%). BQA training generally increases with herd size, with 2.17% participation for Master Cattleman was in herd sizes of 1-24 head and 22.22% participation for herd sizes of 500-999 head. Producers with 1000 head or more did not participate in either program (0%). The highest participation was in herds with 250-499 head (10.53%), while larger herd sizes had zero percent membership.

Producers were asked to identify industry groups in which they held membership. Producers were allowed to check all that applied. Local/County Cattlemen's Associations held the highest membership overall (20.65%), while a near equal 20.26% were a members of the Oklahoma Cattlemen's Association. Breed Association membership was 9.67% and only 7.97% were a part of the National Cattlemen's Beef Association.

Western regions including the Panhandle had higher enrollment in Oklahoma Cattlemen's Association while eastern regions had higher participation in Local/County Cattlemen's Associations. The Southeast had the lowest membership at only 6.38% enrollment in the National Cattlemen's Beef Association. Discounting herds greater than 500 head in some cases, membership in industry groups generally increases with herd size. Oklahoma Cattlemen's Association had the highest participation among herd sizes, at 62.50% for herds with 500-999 head.

2.4.5. Net Income

Producers were asked to report the past year's household net income from all sources, including off-farm income. Approximately half of producers earn \$60,000-90,000 (27.15%) or \$30,000-60,000 (27.84%) per year. Around 30% of producers are earning more than \$90,000 per year. The remaining producers reported making less than \$30,000 per year (12.45%). The distribution of net income is similar across regions. By herd size, however, a rough pattern begins to emerge, showing that as herd size increases, net income tends to increase as well.

2.4.6. Farm Income

Producers were also asked to report what percentage of the past year's household net income came from their beef cattle operation. Referring to Figure 2.6 below, around 5% of producers reported that their cattle operation contributed nothing to their overall income. The majority of producers generated 1-20% of total net income from cattle (53.98%). Only a combined 7% of producers derived 61-100% of their income from cattle.

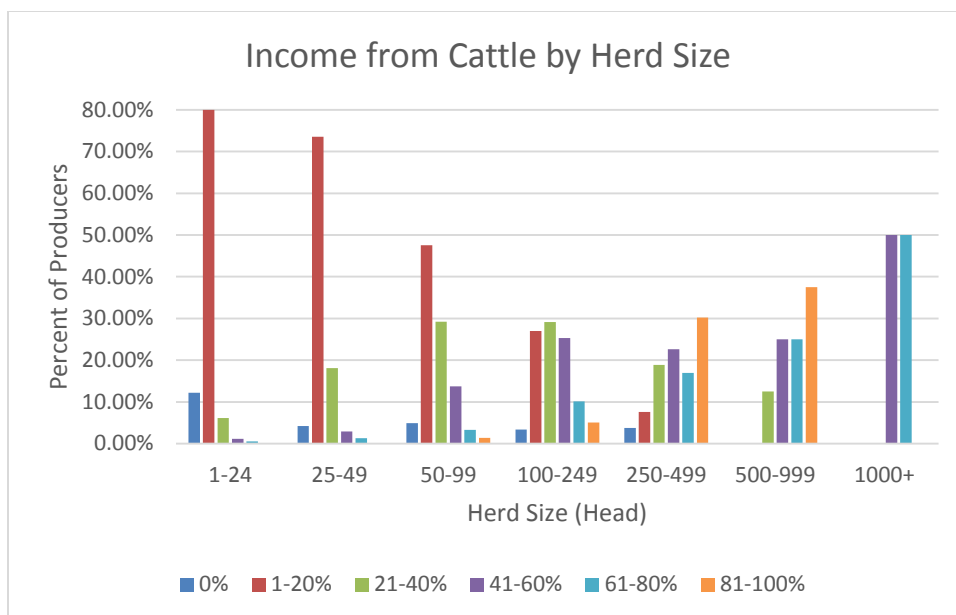


Figure 2.6: Income from Cattle by Herd Size

Each region generally had a few producers claiming 0% contribution. A majority of producers in each region reported earning only 1-20% of net income from cattle. As percentage of income derived from cattle operation increased, fewer producers reported. By herd size, another pattern becomes visible. The smallest herds (1-24 head) accounted for the largest percentages of 0% and 1-20% of income from cattle. As herd size increases, income from cattle increases in most cases, as expected. However, there are a few exceptions. High percentages of producers with herd sizes 250-499 (30.19%) and 500-999 (37.50%) report 81-100% of their income coming from cattle. Interestingly, a small percentage of producers with herd sizes 100-249 (3.38%) and 250-499 (3.77%) head report 0% household net income coming from their cattle operation.

2.5 CONCLUSION

The Beef Management and Marketing Survey gives insight into how Oklahoma cow-calf producers are managing calves on the ranch prior to marketing as well as insight

into marketing decisions made by those producers. This information facilitates extension programming focused on producer needs and provides measures of success.

Consistent with anecdotal evidence, results indicate that a majority of producers do not follow a defined calving season. This is troublesome due to the lack of intentional management it implies. Of those vaccinating these calves, slightly under half of producers vaccinate one to three months after birth, with slightly fewer waiting until weaning. Some producers implement more than one round of vaccinations.

The plethora of practices analyzed in the survey have relatively low adoption rates. Although there is still room for improvement, castration is the most often adopted practice, which is expected. Although more than half of surveyed producers practice castration, dehorning, and deworming, the remaining 10 practices have lower adoption rates. The basic and preconditioning practices, including castration, dehorning, deworming, bunk training, weaning, and vaccinating, are the most implemented. Management and record keeping practices, including implanting, no antibiotics, age and source verification, vaccination, medical, and birthdate records, and individual identification, fall behind in adoption. The lack of preconditioning is consistent with a majority of producers reporting marketing their calves at weaning, with a smaller percentage keeping calves an additional 30+ days after weaning, (presumably as part of preconditioning efforts).

Extension efforts can be made toward higher adoption of simple practices and also to demonstrate the benefits of the more labor intensive or costly practices. In order for these programs to be effective, it is helpful to know the constraints and incentives for practice adoption as well as the producer's knowledge base regarding each practice.

Some common constraints to address in these programs include have not done it in the past and have done okay, requires too much labor, and buyers didn't pay a premium for it. Constraints can be individually identified and addressed in efforts to increase adoption. Incentives cited can be brought to the attention of non-adopters in order to increase awareness and adoption as well. Some common incentives are increased weight gain and buyer premiums. Lastly, the producer knowledge responses will help educators know what issues to better address. Clearly, if the producer says they are unfamiliar with the practice, they cannot be expected to implement it.

The survey also gives insight into where producers get information as well as where they desire to get it from. Over half of producers surveyed said they never consult their county extension educator for marketing information. The highest cited source for consultation more than twice in a one year period was other cattlemen. However, when asked why they do not participate in special marketing programs, producers most often cited not knowing where or how to find programs or sales that market value-added cattle. Responding producers said that, when thinking about valuable information sources, extension county meetings, newsletters, and OSU Factsheets were the most desired when measured with a weighted average ranking process.

Most producers are marketing calves less than 50 miles from their operation, with those selling further away generally having a larger herd size. The extension goal here would be for producers to realize marketing opportunities, not by distance to sale, but instead by where the most opportunity for profits exist for their specific operation. If producers are implementing specific practices, education should be provided on where to best realize the profit opportunities for these specific practices. The small amount of

producers marketing anywhere other than regular local sales suggests the need for additional sale knowledge and opportunity.

Demographic questions help summarize characteristics of the current Oklahoma cow-calf producers. The average Oklahoma cow-calf producer has a high school education, is over 65 years old, and has more than 25 years of experience in the cattle business. This producer makes a net income of \$30,000 to \$60,000 per year, deriving 1 to 20% of this income from the cattle operation.

Comparisons of producer practice adoption rates and other management and marketing decisions over time would provide useful benchmarks for programming. The study team hopes to conduct a follow-up survey to reexamine the survey attributes as well as to assess changes that have occurred since original distribution. This information is of great value to both research and extension programming targeted at adding value to Oklahoma beef cattle.

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Chapter 3 THE VALUE OF SELLER REPUTATION

The cattle industry has been advancing in the arenas of traceability, source verification, genetics, and preconditioning management practices (Schumacher, Schroeder, and Tonsor 2012). While the premium value of attributes such as breed, condition, and preconditioning programs has been researched (Schumacher, Schroeder, and Tonsor 2012), the models have left out a potentially important component: seller reputation. No matter the extent of age and source verification paired with health, nutrition, genetics, and management practices, notoriety in the community or industry is sometimes referred to as the most important aspect of sale price. Popular publications often refer to reputation cattle without an actual definition or full understanding of profit opportunities.

“Only after years of experience can an artist gain enough momentum to have a private exhibition of this magnitude. Purebred breeders have to build the same reputation to market cattle in an arena of this magnitude, providing quality in volume.”

<http://www.cattletoday.com/archive/2004/August/CT350.shtml>

“Reputation Feeder Cattle describes historic health management and the genetic potential for feedlot and carcass performance that could impact break-evens and close-outs”

<http://beefmagazine.com/zoetis-verified-beef-announce-feeder-cattle-partnership>

The first quote, although referring to only purebred breeders, implies that reputation requires repeated transaction and speaks to the difficulty of establishment due to time constraints. The second quote is referring to a certification program that took on the name Reputation Feeder Cattle. Although this is a certification program, the group highlights the importance of the program's reputation for quality. Suh and Houston (2010) generally defined reputation as a seller characteristic encompassing beliefs about the organization held by others. Brand reputation sends a quality signal to the marketplace that can reduce buyer uncertainty through repeated transactions.

Attention has been paid to researching the effects of seller reputation in various markets- most non-agricultural (Shapiro, 1982; Shapiro, 1983, Bergh et. al, 2010). Reputation is commonly viewed as a method to assess quality developed through a sequence of repeated transactions in an environment of imperfect information. In these instances, there is an incentive for buyers to receive a quality product and sellers to receive a premium for marketed goods. It is also suggested that firms with favorable reputation are trusted more and require less expensive contractual agreements and safeguards (Bergh et. al, 2010). Research has been devoted to relationship and trust studies, but few geared toward the cattle industry and the unique sale barn auction environment.

How much does reputation affect the price of feeder calves? If the value of reputation could be isolated and proved to be profitable, cattlemen could realize the costs and benefits of networking, relationship building, and the work that goes into building a positive reputation. If a portion of premium is attributable to reputation, sellers could network and market themselves more to realize it.

3.1.1. Objectives

This study will analyze premiums and discounts that cattle buyers are willing to pay for various levels of reputation and preconditioning. This research will determine:

1. The \$/cwt value of various levels of reputation as stated by cattle buyers in Oklahoma sale barns,
2. The relationship between value-added (preconditioning) programs and seller reputation

3.2 REVIEW OF LITERATURE

There is little difference in the usage of the words “trust” and “reputation” in the literature. This is why Suh and Houston (2010) distinguished reputation to include beliefs about the organization (seller) that are held by others. Their study suggested that the relationship between partners is more important than trust in impacting business outcomes. In this sense, reputation becomes a strategic asset capable of commanding rents and of increasing or keeping buyer loyalty.

Buyers are in a vulnerable position at auction because there is the possibility of loss, whether it be in prices or quality received (Chiles and McMackin 1996). Trust requires risk; there will always be uncertainty. Because of this, buyers must trust in what they know from past experiences (transactions) in order to make a decision they are

comfortable with. Chiles and McMackin (1996) derive this dynamic of trust and risk through simple Game theory, assuming that both parties will be driven to keep doing business together. Reputation can be for many qualities including honesty, quality, or trustworthiness. A good reputation has the ability to reduce costs over time by lowering incidence of switching transaction partners and having to rediscover quality. Although research mainly focuses on hedonic pricing models that assess the value of product characteristics, Turner, McKissick, and Dykes (1993) found that reputation may be an important factor being left out of common models.

3.2.1. Reputation definitions

Shapiro (1983) famously suggested that reputation is what helps buyers acquire a quality good in a market with little or imperfect information (Turner, McKissick, Dykes 1993). Without the ability to assess quality prior to purchase, seller reputation from repeated transactions has proven to be useful and is often referred to in many industries and circumstances. (Suh and Houston 2010; Turner, McKissick, Dykes 1993; Chiles and McMackin 1996; Bergh, et al. 2010). Reputation has been shown to be a strong factor of competitive advantage and seller strategy (Bergh, et al. 2010). Along with benefiting buyers with quality, sellers are rewarded with a premium for their investment, which may be at a loss until reputation is established. Because of possible losses in the reputation establishment period, incentive exists for sellers to achieve short-run gains by foregoing long term reputation benefits by producing a lower quality product. In feeder cattle markets today, most preconditioning practices are not visually observable, as unvaccinated calves can appear healthy and vaccinated calves can still develop respiratory issues (Williams et al. 2012). The uncertainty of this credence good can be

overcome by establishing certifications for various desired qualities in order to secure deserved premiums for producers without established reputations (Schumacher, Schroeder, and Tonsor 2012).

Reputation must be met with quality in order to produce a premium (Shapiro 1983). Pre-sale quality checks along with producer preconditioning practice assurance (i.e. third-party verification) have made live cattle sale information more efficient. The Shapiro theory then suggests that reputation will have less of an effect on final purchase price in these cases. In these markets, the information lessens the possibility for short term gains from low quality goods and thus reputation influence should be shrinking. However, many still refer to reputation as a component of price, despite the detailed the information provided in many cases (Schumacher, Schroeder, and Tonsor 2012; Lawrence and Yeboah 2002). Bergh, et al. (2010) stressed that more work needs to be done to better understand reputation and how it is used.

3.2.2. Cattle price determinant research

Most models of price determinates in cattle auctions are conducted via hedonic pricing models wherein price is determined through various lot characteristics (Williams et. al, 2012; Zimmerman et. al, 2012; Williams et. al, 2012; Ward and Lalman, 2003). Although more recent research attempts to quantify the effects of various levels of preconditioning attributes, there are very few that derive results from survey data. Vestal, Lusk, DeVuyst, and Kropp (2012) performed a combination price determination approach where hypothetical survey data was combined with actual sales data to determine the value of genetic information to livestock buyers. Schumacher, Schroeder, and Tonsor (2012) performed a choice experiment to determine willingness to pay for

certification. Little research has been conducted where reputation is included as a price determination factor in cattle auctions. Williams et. al (2012) attempts to capture reputation by including a dummy variable (0,1) in their hedonic model for if the seller was announced or not.

Schulz, Dhuyvetter, and Doran (2015) found special sales, feedlot capacity, and seller reputation to be important components contributing to feeder-calf prices. This study focused on the variable effects on pricing in state-specific preconditioning sale environments. The reputation was measured through specific seller names paired with preconditioning information in Iowa feeder cattle auctions. The authors here stressed the possible importance of location or sale reputation along with simple individual seller reputation. The hedonic pricing model calculated reputation by assessing achieved premiums or discounts after accounting for all other descriptive variables. Only 21% of lots sold received prices statistically different from the benchmark, which indicated a likely seller reputation impact on price.

Turner, McKissick, and Dykes (1993) observed few sellers experiencing reputation effects in Georgia teleauctions. Although relatively dated results, this study is the benchmark for reputation studies. Results showed that the teleauctions with the least amount of information available prior to sale yielded the greatest reliance on seller reputation, therefore confirming Shapiro's theory. Although significant reputation impact was found in two cattlemen's association sale environments, only a few sellers had significant coefficients. Also, speculation on what factors could be captured in a reputation effect coefficient could have caused reputation to not be explicitly or directly measured in its entirety.

3.2.3. Quality signals

The cattle market has become increasingly efficient in realizing profits from various value-added practices. An abundance of research has collectively identified numerous traits, practices and certifications that influence premiums. Physical traits known to influence price include: breed, color, muscle score, frame size, condition, horn status, health at sale, temperament, weight, and gender (Schumacher, Schroeder, and Tonsor 2012; Vestal et al. 2013; Williams et al. 2012; Lawrence and Yeboah 2002). Market factors affecting price on day of sale include: lot size, overall sale volume, time of sale, time of year, feeder cattle futures prices, corn future or spot prices, slaughter prices, total number of buyers present, number of lots for sale, lot uniformity, auction location, and prevailing market conditions (Williams et al. 2012; Lawrence and Yeboah 2002). Preconditioning practices and other on-farm practices shown to add value include: weaning, vaccinating, age and source verification, dehorning, castration, and management practices targeted to niche markets such as natural or organic (Schumacher, Schroeder, and Tonsor 2012; Williams et al. 2012). With all these factors proven to impact price, is there any undiscovered profit territory reserved for reputation? Does reputation enhance premiums in the absence of certification for credence practices? The findings are consistent (Schumacher, Schroeder, and Tonsor 2012; Vestal et al. 2013; Williams et al. 2012; Lawrence and Yeboah 2002); additional information provided to buyers results in premiums (\$/cwt). It is common in the market for cattle buyers to desire purchase of preconditioned animals, preferably weaned and certified (Schumacher, Schroeder, and Tonsor 2012; Williams et al. 2012). When animals are certified as preconditioned, the certification eliminates uncertainty and it is assumed that they will

perform better. Some producers do not adopt a number of preconditioning practices.

Whether non-adoption is due to cost, time, or other reasons, establishing a reputation in the marketplace for quality and reliability could potentially benefit those opting out of preconditioning programs or enhance the premiums of those implementing a certified preconditioning program.

Inefficiencies in the system due to information mistrust or false reporting often lead to unnecessary and costly measures being taken by the buyer. Schumacher, Schroeder, and Tonsor (2012) asserted that lack of information or trust in information often results in cattle being routinely revaccinated, retreated, and/or re-implemented upon arrival at the feedlot. This is additional cost to the system and is why the practice of preconditioning verification of calves reported by a trustworthy third party has grown in popularity (Williams et al. 2012; Lawrence and Yeboah 2002). This method of information distribution is said to increase authenticity and reputation due to the reliability of third party verification compared to the seller's word paired with visual signals on the date of sale. Many value added procedures cannot be visually confirmed at time of sale (Williams et al. 2012; Williams et al. 2012).

Producers clearly need to know what programs and certifications will benefit their operation's reputation—especially when willingness-to-pay (WTP) premiums for value-added practices are so reliant on the current market prices (Schumacher, Schroeder, and Tonsor 2012). It is also important for producers to realize that each value-added process comes at a cost in addition to the base cost of finishing the animal (Williams et al. 2012).

Groups such as the United States Department of Agriculture, Oklahoma Quality Beef Network (OQBN), and the Iowa-Missouri Beef Improvement Organization

(IMBIO) have been assisting producers in realizing deserved profits for preconditioning practices through verification. OQBN membership has been shown to profit producers (Williams et al. 2012). Williams et. al (2014) found that adopters of a VAC-45 preconditioning program receive premiums over \$57/head over 80% of the time. Both programs bring in higher returns for producers than they likely would have realized at regular/traditional sales (Lawrence and Yeboah 2002), though participation in these programs is still low relative to the number of cattle producers in their respective regions. The OQBN and IMBIO try to bridge the gap between buyers and sellers with no previously established quality, making reputation quicker to establish (Lawrence and Yeboah 2002). It is important to note that both modes of price determination are imperfect and may complement each other when used in tandem.

3.3 METHODS AND DATA

3.3.1. Hypotheses

Turner, McKissick, and Dykes (1993) concluded their research by stating the possible importance of reputation in feeder cattle pricing and stressing the need for further research where reputation is directly measured. There are many studies that acknowledge the possible impact of reputation in pricing. As such, I hypothesize:

H1: Buyers will pay a premium for feeder calves produced by a seller with established reputation for quality relative to sellers with non-established reputations.

Research conducted by Schumacher, Schroeder, and Tonsor (2012) on third-party verification shed light on the possible impacts of reputation in relation to quality.

Reputation has been mentioned many times in the sense that it serves as a strategic resource, usually following quality (Bergh, et al. 2010). Shapiro (1983) confirmed that reputation is nonexistent without a quality established through repeated transactions. Thus leading to the second hypothesis:

H2: Positive reputation and preconditioned lots will result in positive coefficients, meaning buyers are willing to bid more on these lots.

3.3.2. Methods and Data

Although subject to hypothetical bias, a survey method has the ability to isolate the effects of changes in only the variables of interest. Lusk and Schroeder (2004) found that hypothetical responses led to higher probabilities of purchasing in choice experiments, showing that hypothetical choices are often overestimated when it comes to willingness-to-pay. However, marginal effects were not statistically different across hypothetical and binding options in the beef steak experiment. This finding increases validity of the following effects of the hypothetical bidding scenario.

Schulz, Dhuyverrer, and Doran (2015) collected real sale data and came to the conclusion that the difference in prices at preconditioned sales could be caused by seller reputation. However, due to data unavailability, they were not able to assign an actual value to this hypothesized reputation effect. As of now, reputation is likely being confounded into other common model effects. Without a reliable method to collect data on reputation as a factor in actual feeder cattle sales, a survey based method was utilized.

The survey was designed to elicit producer valuations of specific characteristics from cattle buyers regarding reputation and management practice bundles for feeder calves as well as purchasing tendencies and demographics of cattle buyers. Although the

survey is based on hypothetical bids, it is assumed that buyers made decisions as they normally would at each specific location due to the environment and timing of survey distribution. Because it has been previously estimated that preconditioning often results in a premium for the seller, this study focuses on the impact of reputation as a signal of quality, and therefore premiums, in both situations when preconditioning is present and when it is not.

Producers were shown a reference video clip of a lot of calves coming through. The reference video shown was filmed locally and was graded by a USDA AMS professional for description accuracy. All previously found price attributes (lot size, color, breed, market conditions, etc.) were held constant to focus only on the attributes of concern. The video reference and basic characteristics of the lot provided were identical across varying levels of preconditioning and reputation. All lots described were in the 500-599 weight range, black hided, slightly fleshy, Medium and Large No. 1 steers of equal lot size. The method excludes seasonality and other commonly examined influences as skewing factors by using an experimental design focused only on changes only in the given variables. All other characteristics are held constant. Characteristics varied among lots were various levels of preconditioning and seller reputation. Table 3.1 below describes the various levels of reputation and preconditioning presented as choices in the survey instrument.

Table 3.1: Survey Definitions

Reputation	
Positive	You or someone you know has previously purchased cattle from the seller and performance and quality was satisfactory
Negative	You or someone you know has previously purchased cattle from the seller and performance and quality was inadequate
Unknown	You have no previous knowledge of the seller/cattle
Preconditioning	
Certified	Calves have third-party verification that the bundle of preconditioning practices has been implemented
Non-certified	Calves are marketed as preconditioned, but without verification.
None	Calves are marketed with no known preconditioning practices implemented beyond castration and dehorning.

Preconditioned calves were defined as those that have been castrated, dehorned, dewormed, vaccinated, weaned for at least 30 days, and feed bunk trained. Reputation is based on previous knowledge about the seller. Each characteristic was varied on the three levels listed in Table 3.1 above, yielding 9 hypothetical lots for buyers to bid on. In order for each factor to be evaluated independently, for a straightforward interpretation of data, a full factorial, orthogonal design was utilized. Buyers were asked to watch the prerecorded video set on a loop while answering questions based on the full factorial orthogonal design. The video was an identical reference for each lot described to reduce variance in bids for external reasons. The order of questions was randomized for each respondent. A survey question is included as Figure 3.1 below for better illustration.

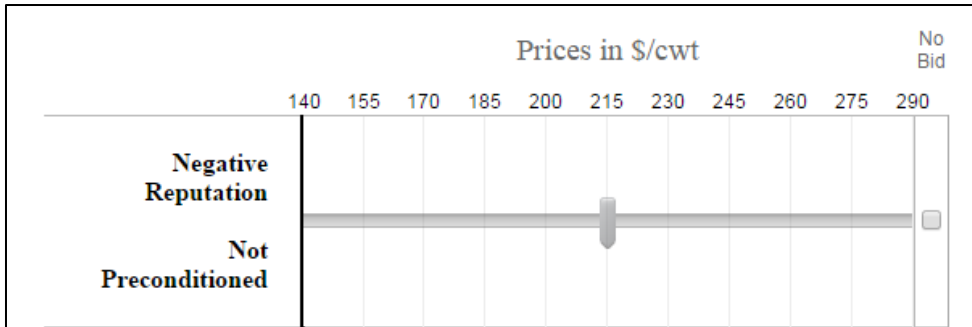


Figure 3.1: Example of Pricing Question

First, buyers were asked to report what they believed the average price for the calves were at their specific location, that week. This was to get the participants in the correct mindset and to give them a value to anchor the remaining responses on. Buyers were asked to report the maximum amount they were willing to bid on each of the 9 hypothetical lots of calves. For example, Figure 3.1 asks buyers what the maximum amount they would be willing to bid on a lot of calves where the seller has a negative reputation and the calves are not preconditioned. The sale environment was used as a tool to reduce hypothetical bias by asking respondents to participate on the same day they are actually buying cattle. This was seen as a way to increase the reality of purchasing in order to better solicit willingness-to-pay. It is believed this reduced hypothetical bias the survey was exposed to.

The survey was formatted so that price was reported on a slider scale, ranging from \$180 to \$330 or \$145 to \$225 per hundred pounds. A “no bid” option was also offered to account for lots undesired at any price. The range was modified near halfway through the data collection process, since cattle prices unexpectedly began dropping. The effects of this scale change were considered when analyzing the collected data. Each respondent accounts for 9 individual data points, each representing a willingness to pay value (bid).

Demographic information on age, gender, and education are solicited from survey participants. Questions regarding normal activities of the buyer are also asked, including: the reason for buying, if they know the seller, and how many or how often they buy. This will be useful in assessing whether factors external to the cattle impact willingness to bid for certain characteristics.

The survey was sent to a test group of industry professionals to assure clarity and model effects before the actual survey distribution. The revised survey was then implemented at selected feeder cattle auction venues throughout Oklahoma during the 2015 fall season (IRB AG1538). The auctions selected are those where a significant number of “reputation cattle” and certified preconditioned cattle are marketed on a regular basis. The sale locations chosen were those selected by Oklahoma State to host Oklahoma Quality Beef Network preconditioned sales. There were six locations total, with multiple visits at some locations. Survey respondents were cattle buyers in attendance at chosen sales, prompted to participate upon entering the venue. Personal interaction was heavily utilized to persuade buyers to participate. Participants entered responses on an iPad provided and were compensated for their time with a small trinket.

Non-probability sampling was used in order to survey information-rich subjects. Subjects were volunteers from cattle buyers in attendance at selected auctions. Flyers were distributed in various locations at each sale location, directing buyers to the preset table to take the survey. The survey was electronic (Qualtrics) and was completed on provided iPads. The survey data contains no identifying information of subjects, and so is completely confidential. Over the 6 sale locations, 45 useable survey responses were collected in Fall 2015, resulting in 405 data points. Although this seems a small amount

of responses, the number of head purchased per year by these cattle buyers is estimated at around 70,000 head in volume and could be vastly greater.

3.3.3. Empirical model

Most studies analyzing the contribution of specific traits to feeder cattle prices use secondary data hedonic modeling. Previous studies tend to utilize models wherein price is determined by visual and other attributes provided at time of sale. Although hypothetical, this study will follow a similar model form wherein price is determined by select attributes (preconditioning and reputation), holding all others constant. As in Vestal et al. (2012), the value of each lot of calves is estimated using Equation 1 below.

$$(1) WTB_{ik} = \beta_0 + \beta_1 positive_i + \beta_2 negative_i + \beta_3 certified_i + \beta_4 uncertified_i + \beta_5 base_i + \sum_{d=1}^{11} \beta_d dem_{kd} + \varepsilon_{ik}$$

where willingness to bid (WTB) is the price for lot i in the survey from respondent k , β_0 is the intercept for price, the following β_s represent the coefficients for each attribute that lot i possesses, β_d represents the coefficient for each demographic inclusion, dem_{id} is the demographic variable value that each respondent reports, and ε_{ik} represents the overall error of the model. Model results were estimated using an Ordinary Least Squares (OLS) model in the Statistical Analysis Software (SAS) program.

3.4 RESULTS

3.4.1. Data Summary

Table 3.2 below summarizes all survey variable responses. For increased understanding, a variable definitions table can be found in the Appendix, Table 5.12.

Table 3.2: Summary Statistics

Variable	Mean	Std Dev	Minimum	Maximum
Price Change				
Before	0.62	0.49	0	1
After	0.38	0.49	0	1
Location				
Barn 1	0.22	0.42	0	1
Barn 2	0.09	0.28	0	1
Barn 3	0.16	0.36	0	1
Barn 4	0.07	0.25	0	1
Barn 5	0.33	0.47	0	1
Barn 6*	0.13	0.34	0	1
Dependent Variable				
Price	165.46	66.54	0	236
Experimental Variables				
Negative	0.33	0.47	0	1
Unknown*	0.33	0.47	0	1
Positive	0.33	0.47	0	1
None*	0.33	0.47	0	1
Uncertified	0.33	0.47	0	1
Certified	0.33	0.47	0	1
Base	184.49	44.65	0	231
Demographics				
Male	0.96	0.21	0	1
Female	0.04	0.21	0	1
Age25_34	0.09	0.28	0	1
Age35_44	0.13	0.34	0	1
Age45_54	0.22	0.42	0	1
Age55_64	0.36	0.48	0	1
Agegt65*	0.20	0.40	0	1
< High School	0.00	0.00	0	0
High School*	0.29	0.45	0	1
Some College	0.24	0.43	0	1
Two Year Degree	0.09	0.28	0	1
Four Year Degree	0.33	0.47	0	1
Masters	0.04	0.21	0	1
Own Operation	0.53	0.50	0	1
Employer	0.07	0.25	0	1
Multiple Buyers	0.09	0.28	0	1
Personal and Employer*	0.31	0.46	0	1
Personal	10.13	21.53	0	85
Employer*	18.76	32.83	0	99
Direct*	28.20	29.01	0	90
Auction	71.80	29.01	10	100
Sale Tendencies				

Resale	0.24	0.43	0	1
Pasture	0.89	0.31	0	1
Feedlot	0.33	0.47	0	1
Care about reputation	0.64	0.48	0	1
Don't care about reputation*	0.36	0.48	0	1
Prefer Quality	0.91	0.28	0	1
Prefer Quantity*	0.09	0.28	0	1
Volume				
Weekly*	0.49	0.50	0	1
Monthly	0.13	0.34	0	1
Biannual	0.09	0.28	0	1
Annually	0.29	0.45	0	1
Day1_25	0.27	0.44	0	1
Day26_75	0.22	0.42	0	1
Day76_200	0.29	0.45	0	1
Daygt201	0.22	0.42	0	1
Year1_50	0.11	0.31	0	1
Year51_200	0.13	0.34	0	1
Year201_500	0.09	0.28	0	1
Year501_1000	0.13	0.34	0	1
Year1001_2500	0.11	0.31	0	1
Yeargt2501*	0.42	0.49	0	1

* Indicates variable used as a base for comparison

A descriptive summary of the survey data provides preliminary insight into buyer behavior. Figure 3.2 below shows the average bid (\$/cwt) as well as average percent change from the respondent-listed base price for each choice question. Buyers appear to be more sensitive to loss in cases of less information than to gains resulting from more information. Interestingly, this summary shows extreme loss aversion even in the case of hypothetical bidding.

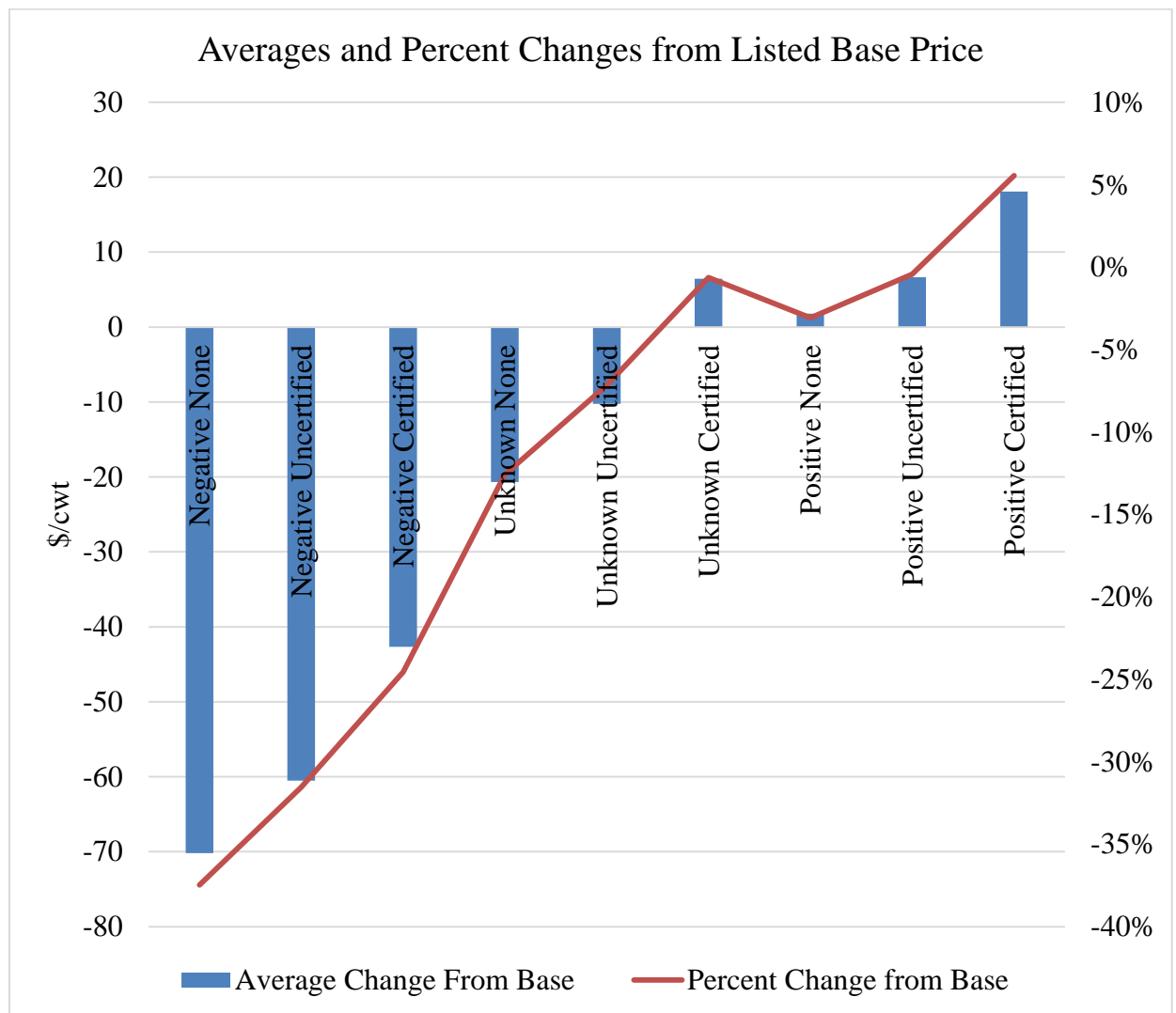


Figure 3.2: Averages and Percent Changes from Listed Base Price

Figure 3.3 below displays the range of bids cast, both before the price range modification and after. Overall, there were 53 zero bids, or “no bids”, out of the 405 total observations, dispersed relatively evenly across the sample.

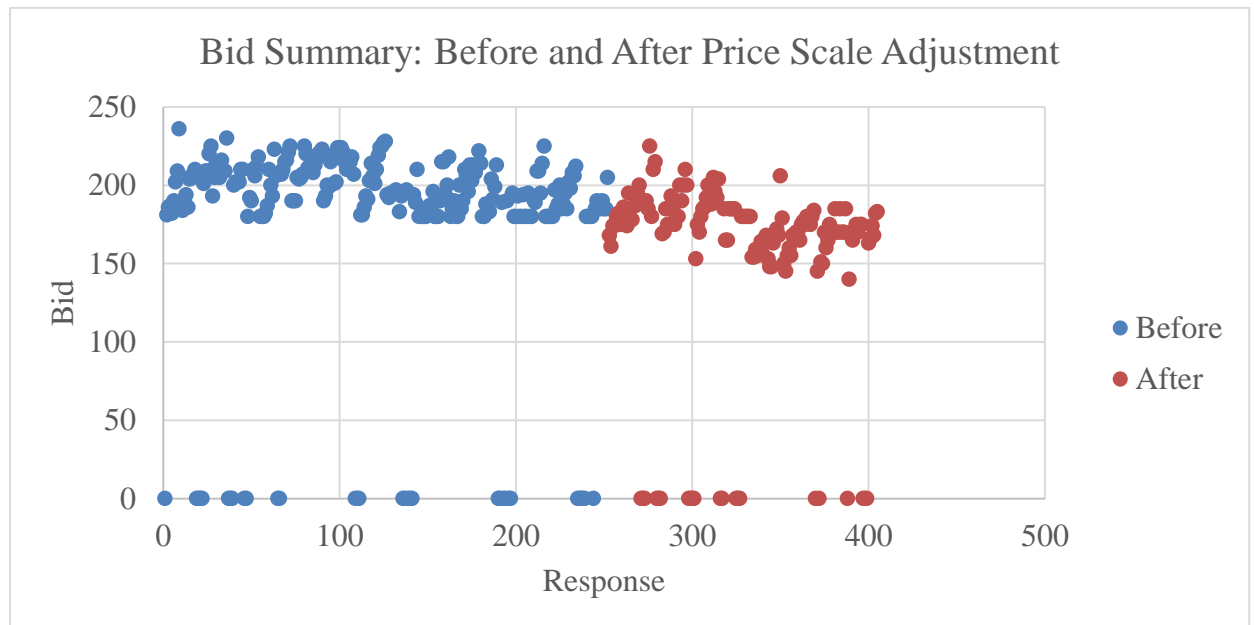


Figure 3.3: Bid Summary

The distribution of livestock market locations is summarized in Figure 3.4 below. Some locations were frequented multiple occasions, while some were reported from only once. OKC West in El Reno, OK was the most visited barn that also yielded the most survey responses. Three of the locations noted below are federally reported through the USDA’s Agricultural Marketing Service.

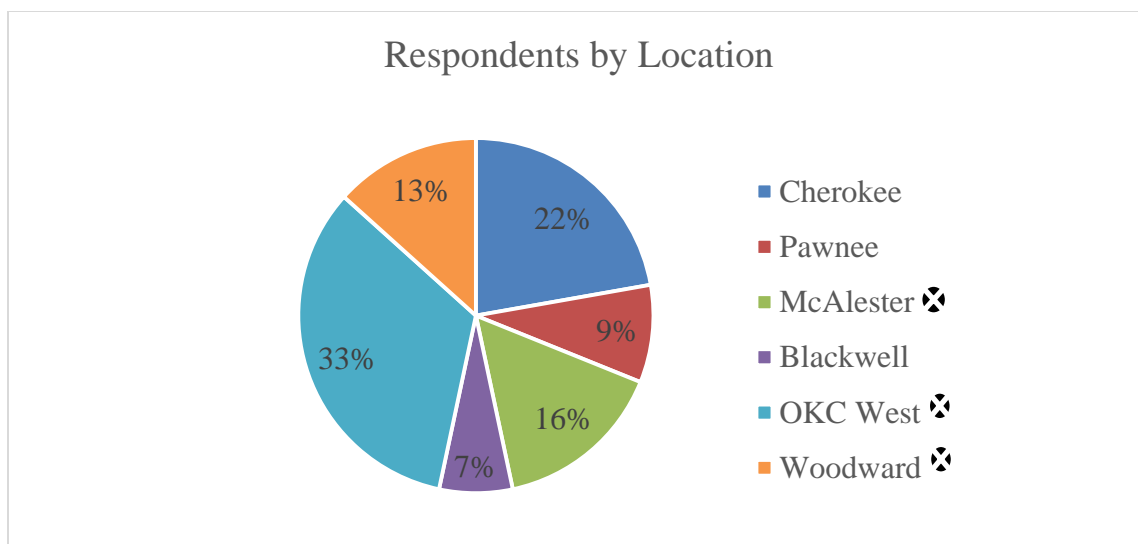


Figure 3.4: Respondents by Location (✕ USDA-AMS Reporting)

Only 4% of responses were female. There were no respondents under the age of 25 and only 9% were between 25 and 34 years old. The most represented age group was 55-64 years old (36%), with another 20% of respondents over the age of 65. There were no respondents with less than a high school education, but 29% had only a high school education. Also, 24% of respondents had only some college while 9% completed a two year program and 33% completed a four year program. Approximately 5% of respondents had a master's degree, while none had doctoral or professional degrees.

On average, buyers are buying feeder cattle at auctions a large majority (71.8%) of the time and buying feeder cattle directly from the ranch less frequently. The bulk of buyers surveyed are purchasing cattle either on a weekly (48.9%) or an annual (20%) basis. Buyers purchase exclusively for personal operations 53% of the time. Many buyers purchase for both personal use and for employers (31%), leaving 7% purchasing exclusively for their employer and 9% purchasing for multiple other buyers. Buyers who reported buying for personal use as well as for employment reported purchasing an average of 35% of total haul for personal use and 65% for their employer.

Buyers were asked how many head they were buying over the course of a year. Results are summarized in Figure 3.5 below. The largest group of buyers purchase more than 2501 head of cattle per year (42.22%).

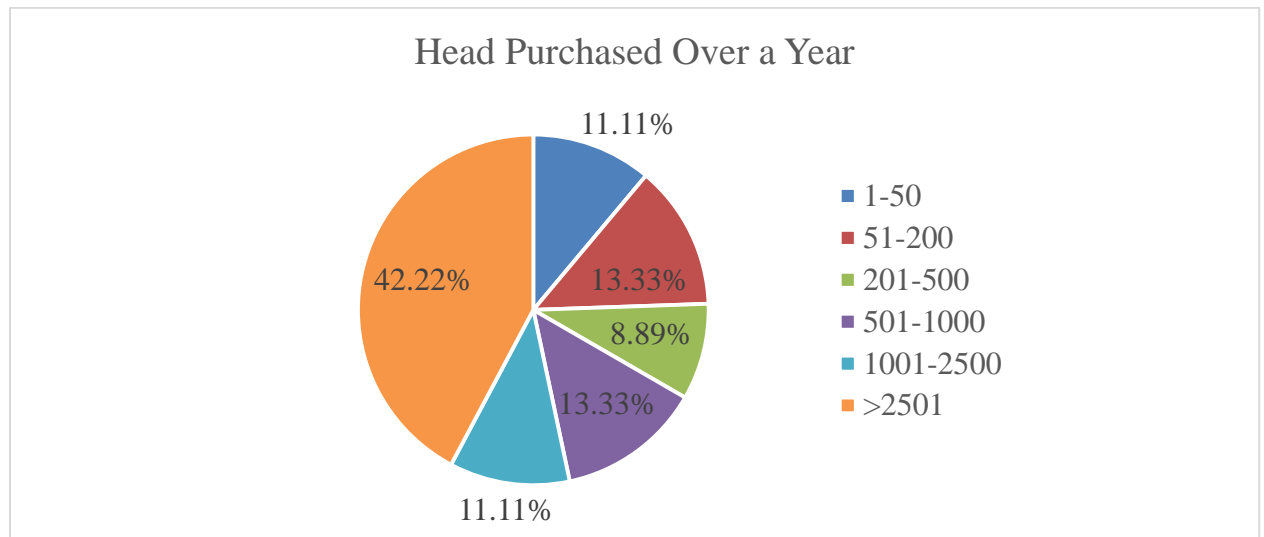


Figure 3.5: Head Purchased Over a Year

When buyers were asked the immediate destination of the calves after leaving the auction, 24% bought calves bound for resale, 89% had calves bound for pasture, and 33% were sending the calves straight to a feedlot. Note that buyers were able to select more than one destination. A majority of buyers surveyed (64%) claimed that reputation impacted their last decision to purchase cattle. Almost all producers (91.11%) claimed preference for a short truck of quality cattle over a full truck of questionable cattle.

To help refine the definition of reputation, participants were presented qualities thought to impact reputation and asked to rank them in order of importance. Using a weighted average analysis, the results are summarized in Table 3.3 below. The clearest indicator of reputation when considering personal qualities is “Previous lots of calves purchased from the seller have performed well.” The most pertinent fill-in response in the “Other” category mentioned the reputation or trustworthiness of the auction owner or sale

location. There were multiple attributes close in weighted averages for the sale information. However, buyers ultimately said that previous performance is the most important in reputation establishment, with third-party preconditioning verification, such as OQBN, closely behind.

Table 3.3: Ranked Reputation Definitions

Weighted Rankings of Reputation Attributes	
Personal	
4.58	Previous lots of calves purchased from the seller have performed well
3.78	Your friend/neighbor has previously purchased from the seller and saw good performance
3.20	You are friends/neighbors with the seller
2.31	You attend the same church as the seller
1.13	Other
Sale	
3.87	Previous performance
3.82	Third-party preconditioning verification (such as OQBN or similar programs)
3.49	Knowledge of seller
2.80	Preconditioning announcements at sales
1.02	Other

A full summary of the descriptive statistics for variables can be found in Table 3.2.

3.4.2. Model Selection

Table 3.5 reports model coefficients for four alternative models estimated using OLS regression analysis. Coefficients included in the choice experiment were statistically significant and constant across models. The exception is uncertified preconditioning, which is never significantly different from zero. The base coefficient is small, significant, and fairly similar across models. The base variable was elicited specifically to become an anchoring value for individual respondents.

When selecting an appropriate model, correlation coefficients of similar demographic questions were considered in addition to other measures of fit in order to

maintain all OLS assumptions. The base model (Model 1), which includes only the choice experiment variables, is included for comparison. There was high correlation between daily and yearly volume characteristics as well as frequency of purchases in the market. This is to be expected, predominantly because the quantity of head purchased over the course of a day paired with frequency in the market is likely predictive of how many head would be purchased over the course of a year. In an attempt to reduce this correlation, daily volumes were omitted. A summary of this model is shown as Model 2 in Table 3.5.

Models 3 and 4 represent model coefficients when frequency and yearly volume, respectively, is removed from the model. Model 3 is homoscedastic and has no VIF greater than 10, so was chosen as the most viable model. Model 4 displays one variance inflation factor (VIF) greater than 10 as well as heteroscedasticity as indicated by the White Test.

3.4.3. Chow Testing

Usually, the fall season shows an upturn in the feeder cattle market. In 2015, markets continued to drop instead, constraining the survey sliding scale by the lowest price. The sliding price scale was altered near halfway through data collection to account for the reality of decreasing prices. To assess whether this change impacted overall results, a Chow Test was performed for each model. Results are shown later in Table 3.5. All test statistics were significant at the 1% level, indicating there was a structural change between the two price scales. The structural difference was then tested by examining the coefficients for choice variables compared to those after the price change, using a dummy variable for after. The source of this structural difference was examined, ultimately

showing that there are no significant differences between individual parameters, illustrated in Table 3.4.

Table 3.4: Structural Difference Testing Summary

Parameter	Parameter Estimate	
	Before	After
Intercept	93.832*** (13.540)	
Negative	-41.866*** (8.552)	-20.590 (13.612)
Positive	17.003** (8.552)	-0.047 (13.612)
Uncertified	2.122 (8.552)	16.403 (13.612)
Certified	22.122*** (8.552)	4.030 (13.612)
Base	0.418*** (0.068)	-0.082 (0.064)

***, **, and * denote 1%, 5%, and 10% significance levels, respectively. Numbers in parentheses represent standard errors

3.4.4. Results

The parameter estimates in Table 3.5 refer to changes in feeder-calf prices in dollars per hundred pounds (\$/cwt) in relation to the independent variable bases indicated in Table 3.2. Premiums are represented by positive coefficients and negative coefficients denote discounts. The following results all correspond to Model 3 unless otherwise specified.

As hypothesized, negative reputations result in a large discount (\$49.64/cwt) while positive reputations achieve a comparatively smaller, but positive, premium (\$16.99/cwt) when compared to an unknown seller reputation. Results also indicate that buyers would offer a significant premium in the case of certified preconditioned calves

relative to calves with no preconditioning (\$23.64/cwt). This premium for certified preconditioning is comparable to those found in Williams, et. al, (2012) and Williams, et. al, (2014). The coefficient value for uncertified preconditioned calves is not statistically significant in any model. All other choice variables are highly significant at the 1% level. Results suggest that a seller could sell certified preconditioned calves and still receive a considerable discount if the reputation was negative. The base coefficient which participants anchored their bidding decisions on, relates to the overall willingness-to-pay. When the base price increases by \$1/cwt, the overall bidding price increases by \$0.62/cwt. So, those listing a higher base price were willing to bid more overall.

It is important to note that currently the parameter estimates only show the change demographics have on the intercept, in relation to the base category. In order to interpret demographic effects on the value of preconditioning and reputation levels, all variables need be interacted. In Model 3, which contains no purchase frequency variables, two yearly volume variables are significant. Buyers purchasing 51 to 200 head per year were only willing to bid \$24.68/cwt less than the base buyer, while buyers purchasing 1001 to 2500 head per year in volume also bid less than the base at \$40.53/cwt.

Buying exclusively for an employer was not statistically different from zero. However, buying for multiple buyers was significant at the 5% level and buying for self was significant at the 10% level. Buyers purchasing for their own operation were willing to bid \$22.96/cwt less than the base buyer. Interestingly, buyers purchasing for multiple buyers were willing to bid \$32.79/cwt more than the base buyer. Actual percentage amount variables of how much buying is done for personal use and how much for an employer were never significant.

Significant age groups included ages 25 to 34 and 55 to 64. Buyers ages 25 to 34 were willing to bid \$43.83/cwt less than buyers older than 65. This seems counterintuitive, since younger people are usually perceived as more risk taking than older individuals. However, these younger buyers may be more risk averse in this case due to buying on loan, establishing their skill, or wanting more of a bargain for the risk they are taking. However, buyers ages 55 to 64 are also willing to bid less, but at a smaller \$21.84/cwt. Education had no significant impact on overall bids. Unexpectedly, sale locations were not significantly different from one another. However, location was an important variable to include for model viability, overall.

There were many questions regarding purchasing habits and buyer demographics. Because these things have not been proven to affect feeder cattle price previously, the nature of the results is hard to predict. Also recall that all coefficients result from keeping typical feeder cattle price determinant characteristics (breed, color, weight, lot size, etc.) held constant.

The Multiple variable was created to represent any buyer who chose more than one immediate destination after purchase. Resale and Feedlot destinations were never significantly different from zero when compared to Pasture (base buyer). However, the Multiple variable was highly significant at the 1% level. Buyers purchasing calves destined for more than one location were willing to bid \$49/cwt less than buyers purchasing solely to send to pasture.

Surprisingly, how often a buyer purchased directly from the farm versus at auction did not have a significant effect on bids. Nor did considering reputation when making a purchasing decision. Buyers who cited quality as being more important than

quantity when purchasing calves are predicted to bid \$47.39/cwt less than those preferring quantity. This finding implies that buyers purchasing for quality have high standards and require a heavily discounted lot in order to sacrifice quality.

Table 3.5: Parameter Estimates for Pricing Model (N=405)

Parameter	Model1		Model 2		Model 3		Model 4	
	Parameter Estimate	p- value	Parameter Estimate	p- value	Parameter Estimate	p- value	Parameter Estimate	p- value
Intercept	85.91*** (13.21)	<.0001	146.29*** (24.54)	<.0001	152.66*** (23.35)	<.0001	127.77*** (24.04)	<.0001
Negative	-49.64*** (6.88)	<.0001	-49.64*** (6.46)	<.0001	-49.64*** (6.46)	<.0001	-49.64*** (6.54)	<.0001
Positive	16.99** (6.88)	0.014	16.99*** (6.46)	0.009	16.99*** (6.46)	0.0089	16.99*** (6.54)	0.0097
Uncertified	8.32 (6.88)	0.2275	8.32 (6.46)	0.1989	8.32 (6.46)	0.1984	8.32 (6.54)	0.204
Certified	23.64*** (6.88)	0.0007	23.64*** (6.46)	0.0003	23.64*** (6.46)	0.0003	23.64*** (6.54)	0.0003
Base	0.43*** (0.06)	<.0001	0.63*** (0.09)	<.0001	0.62*** (0.09)	<.0001	0.62*** (0.08)	<.0001
Cherokee			-13.75 (14.18)	0.3328	-5.77 (12.82)	0.6528	-2.48 (10.92)	0.8202
Pawnee			0.58 (18.55)	0.9751	10.62 (14.47)	0.4635	9.49 (13.72)	0.4897
McAlester			2.56 (12.71)	0.8406	8.90 (11.24)	0.4251	-1.72 (10.72)	0.873
Blackwell			-8.00 (27.15)	0.7683	5.61 (17.22)	0.7449	-8.31 (22.62)	0.7135
Woodward			0.29 (11.99)	0.9806	-1.98 (11.40)	0.8622	6.36 (10.66)	0.5509
Monthly			-15.88 (16.91)	0.3483			-18.31* (10.65)	0.0865
Biannual			1.04 ^ (42.29)	0.9803			10.43 (23.88)	0.6624
Annually			9.84 ^ (24.81)	0.692			13.71 (13.87)	0.3235
Year1_50			-7.78 ^ (30.81)	0.8008	-11.14 (16.32)	0.4954		
Year51_200			-24.86 (21.37)	0.2455	-24.68* (14.66)	0.0931		
Year201_500			18.74 (26.04)	0.4723	10.94 (16.99)	0.52		
Year501_1000			5.36 (21.32)	0.8018	-5.20 (14.69)	0.7236		
Year1001_2500			-26.33 (17.38)	0.1308	-40.53*** (12.74)	0.0016		
RepYes			-1.23 (8.47)	0.8845	-4.94 (7.88)	0.5314	-2.95 (7.96)	0.7112

Quality			-47.76***	0.0007	-47.39***	0.0006	-37.09***	0.0051
			(13.94)		(13.76)		(13.16)	
Auction			0.10	0.5006	0.03	0.8161	0.15	0.3068
			(0.15)		(0.13)		(0.15)	
Personal			-0.37*	0.081	-0.36*	0.0918	-0.21	0.2972
			(0.21)		(0.21)		(0.20)	
OwnOp			-26.34	0.0446	-22.96*	0.0717	-25.84**	0.0345
			(13.07)		(12.71)		(12.18)	
Employer			-29.84 ^	0.5102	-25.58	0.2946	-20.26 ^	0.5531
			(45.26)		(24.37)		(34.13)	
MultipleBuy			30.44*	0.0519	32.79**	0.0342	13.32	0.3375
			(15.61)		(15.43)		(13.87)	
Resale			-6.53	0.6943	-8.96	0.5694	-7.56	0.5835
			(16.60)		(15.73)		(13.77)	
Feedlot			-32.45 ^	0.475	-42.97	0.1052	-36.65	0.2942
			(45.38)		(26.45)		(34.89)	
Multiple			-48.79***	<.0001	-49.00***	<.0001	-38.82***	<.0001
			(10.05)		(9.96)		(8.97)	
Age25_34			-51.43***	0.0031	-43.83***	0.0024	-53.15***	0.0006
			(17.30)		(14.32)		(15.30)	
Age35_44			-4.72	0.7431	-7.86	0.5222	-20.34	0.1085
			(14.38)		(12.27)		(12.64)	
Age45_54			12.01	0.2596	9.35	0.3621	2.46	0.8084
			(10.63)		(10.24)		(10.12)	
Age55_64			-24.47***	0.0087	-21.84**	0.0153	-27.24***	0.0022
			(9.28)		(8.96)		(8.81)	
SCollege			7.30	0.526	6.41	0.5625	5.95	0.546
			(11.49)		(11.07)		(9.84)	
TwoYear			-19.15	0.2782	-8.41	0.5436	-22.49	0.1391
			(17.63)		(13.84)		(15.17)	
FourYear			-16.91*	0.0655	-14.77	0.102	-16.68*	0.065
			(9.15)		(9.01)		(9.01)	
Masters			20.80	0.3346	25.71	0.1493	16.74	0.4235
			(21.53)		(17.79)		(20.90)	
Chow Test	2.92***	0.0085	3.09***	<.0001	3.51***	<.0001	3.33***	<.0001
White Test	107.67***	<.0001	209.48	0.1465	192.31	0.1498	192.09*	0.0809
R Squared	0.2869		0.4198		0.4164		0.3985	
Adj R Squared	0.2779		0.3631		0.3645		0.3485	
No. of Observations	405		405		405		405	

Note: ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

Coefficients with (^) represent those with VIFs larger than 10

Numbers in parentheses represent standard errors

3.5 CONCLUSION

This study sought to measure the impact of seller reputation on feeder cattle market prices, or bids. A hypothetical survey platform was used to elicit bids, demographic information, and purchasing tendencies of real cattle buyers in the market. Results indicate that seller reputation is an important component of feeder cattle pricing. Further, reputation is important in price determination and is even more influential when added to preconditioning.

Results also indicate that individual buyer demographics and buying tendencies sometimes play a large role in bid determination, such as how many head a buyer purchases per year. Although results were obtained using hypothetical bids, the study found preconditioning premiums near magnitudes from previous hedonic models that used auction market data. Uncertified preconditioning was never significant but is sometimes valued as much as certified programs in an actual market setting. It could be that the uncertified preconditioned lots are receiving an unquantified reputation premium. In this case, reputation could be a proxy for certification agents in the market, and vice versa.

3.5.1. Implications

The results of this study indicate that more effort should go into collecting seller data to better include reputation in typical hedonic pricing models. This has not been done in the past likely due to the difficulty of collecting data that would capture seller reputation adequately.

Future studies could include matching hypothetical survey data to actual sale data. Another option could be figuring out how to capture sales data that fully encompasses

reputation in order to include it in common hedonic models. This study was also conducted during special sales but did not gather enough data to compare special sales to regular sales. It would be interesting to measure whether special sales have an impact on price differentials for reputation and other characteristics. Lastly, future study could develop a model wherein demographics can explain the likelihood of bidding more or less on reputation and/or preconditioned lots (interaction model).

3.5.2. Limitations

There are numerous issues that can arise due to the nature of direct data collection. Surveys are prone to many weaknesses and biases. Data may be biased by amount and type of respondents that are prompted to take the survey. For example, older buyers could be more or less likely to participate or require more technical assistance. Additionally, the sample population is virtually unknown. The responses can be subject to hypothetical bias because the participants are not required to use actual money and make a purchase. The measures here are based on stated preferences, and though every effort was made to make the survey as realistic as possible, buyers were not revealing preference in the actual marketplace. Also of concern is disinterest due to the repetitive nature of the questions. There is also a potential for some measurement error where perhaps certain questions were not fully understood.

There are also limitations to data analysis. We chose a large price range in order to capture all effects in full magnitude. The literature stresses that the premiums exist, although the scale/magnitude is unknown. The issue with hypothetical (contingent valuation) studies like this is the risk of strategic manipulation by participants. These

studies have been criticized for not forcing individuals to make a cognitive effort in decision making.

3.6 REFERENCES

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Chapter 4 CONCLUSION

This thesis examines producer decision-making regarding calf management and marketing as well as the value of the reputation that sellers build by their management and marketing choices. The Oklahoma Beef Management and Marketing survey provides a comprehensive profile of cow-calf producers that can be a useful benchmark for future comparison. Results of the Seller Reputation Survey analysis provide insight into feeder cattle price determination from the perspective of cattle buyers. Findings reinforce to cow-calf producers the value of building a positive reputation through careful management of calves prior to marketing.

The Beef Management and Marketing Survey revealed the deficiency in practice adoption of Oklahoma cow-calf producers. Current extension applications aside, perhaps the most valuable future use of this information will be as an extension education impact assessment resulting from benchmarking progress across time.

Calving season, vaccination, and marketing information acquired from the survey has the capability to improve production and sale decisions, therefore increasing overall profitability, health, and efficiency of the operation. The survey was created, in part, to assess extension shortcomings and needs. The sections regarding information sources display the possible disconnect between producers and extension personnel. The highest

cited source of marketing information was other cattlemen, rather than extension or OSU sources, with veterinarians as the second most listed source. However, many producers cited that they think county meetings and factsheets are helpful when making value added marketing decisions.

The practice adoption section of the survey provides an in depth analysis of individual practices as perceived by producers, not only measuring adoption rates, but also citing the constraints and incentives that impact their adoption decision. The importance of these practices is often the focus of current extension programming in livestock management and marketing. There is still room for improvement and, with the assistance of the survey results, educators can target educational programming, based on producer location, herd size, and other demographics. As stated before, a common incentive to adopt practices is the increased reputation with buyers, which is where the second survey stems from.

Seller reputation was proven to have a substantial impact on price through use of a survey tool to elicit feeder cattle buyer preferences. Certified preconditioning program premiums were confirmed as well. Seller reputation identification is a natural implication buyers have for finding quality products. In some cases, where reputation is not established or is established negatively, preconditioning programs could act as a proxy for this reputation, allowing a premium. This realization gives the cow-calf producer some option in how to market calves already invested in. Preconditioned calves may need to be certified in order to receive the premium expected, especially in the case of negative or no reputation for quality in the market.

The extension directions implied throughout this thesis are numerous and extensive. Along with factsheets and publications, extension educator accessibility to these resources will benefit producers. Extension programming can be directed to specific aspects of practice adoption and education. In addition to this, educators can physically show producers what a practice is, how to implement it, and the health and profit benefits of it. Educators can also provide assistance on how and where to market in order to receive fitting premiums for work put in. The overall purpose of this study is to improve the overall supply chain while keeping producers profitable.

Chapter 5 APPENDICES

Table 5.1: Distribution of Producers by Region and Herd Size

	Overall	Northeast	Northwest	Panhandle	Southeast	Southwest
Overall		30.78%	14.85%	1.47%	32.71%	20.19%
1-24	13.92%	11.81%	10.94%	15.79%	17.26%	13.79%
25-49	29.54%	26.88%	27.60%	36.84%	32.15%	30.27%
50-99	33.33%	38.19%	31.25%	26.32%	31.44%	31.03%
100-249	18.33%	18.34%	25.00%	10.53%	14.42%	20.31%
250-499	4.10%	3.77%	4.69%	10.53%	3.78%	4.21%
500-999	0.62%	0.75%	0.52%	0.00%	0.71%	0.38%
1000+	0.15%	0.25%	0.00%	0.00%	0.24%	0.00%

Table 5.2: Monthly Calving Percentages

Month	Number of Producers	Average Percentage Reported	Std Dev	Maximum Percentage Reported
January	505	19.31	16.09	90
February	843	27.47	19.74	95
March	1085	33.05	21.19	100
April	885	21.60	16.26	100
May	517	14.20	12.04	100
June	288	10.69	9.17	60
July	175	8.73	9.46	50
August	229	11.16	10.44	60
September	466	18.92	16.35	100
October	491	17.92	14.05	100
November	405	15.91	14.14	100
December	314	15.17	12.98	95

Table 5.3: Breakdown of Defined Calving Season

	Sequence of Months in Each Calving Season			Percentage of Calves Born	
Early Spring	February	March	April	12.99%	20.88%
Mid Spring	March	April	May	7.19%	
Late Spring	April	May	June	0.70%	
Early Summer	May	June	July	0.08%	0.16%
Mid Summer	June	July	August	0.00%	
Late Summer	July	August	September	0.08%	
Early Fall	August	September	October	0.31%	2.63%
Mid Fall	September	October	November	1.16%	
Late Fall	October	November	December	1.16%	
Early Winter	November	December	January	0.85%	8.12%
Mid Winter	December	January	February	1.16%	
Late Winter	January	February	March	6.11%	
Early Dual	February	March	April	1.01%	2.25%
	August	September	October		
Late Dual	March	April	May	1.24%	
	September	October	November		

Table 5.4: Production Overview

Overall		Region					Herd Size						
		Northeast	Northwest	Panhandle	Southeast	Southwest	1-24	25-49	50-99	100-249	250-499	500-999	1000+
Season													
Summer	0.16%	0.00%	0.00%	0.00%	0.24%	0.38%	0.00%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%
Fall	2.63%	2.76%	2.08%	0.00%	3.08%	2.30%	1.63%	2.98%	3.06%	1.58%	3.51%	0.00%	50.00%
Winter	8.12%	3.77%	9.90%	10.52%	10.16%	9.96%	7.06%	6.70%	9.40%	7.94%	14.03%	22.22%	0.00%
Spring	20.88%	17.34%	31.77%	63.16%	16.31%	22.60%	17.94%	21.09%	19.00%	26.99%	15.79%	11.11%	0.00%
Early Dual	1.01%	2.01%	0.00%	0.00%	0.47%	1.15%	0.00%	0.25%	1.97%	1.19%	1.75%	0.00%	0.00%
Late Dual	1.24%	3.02%	0.00%	0.00%	0.95%	0.00%	0.00%	0.50%	2.18%	2.78%	0.00%	0.00%	0.00%
Undefined	65.96%	71.10%	56.25%	26.32%	68.79%	63.61%	73.37%	67.98%	64.39%	59.52%	64.92%	66.67%	50.00%
Defined	34.04%	28.90%	43.75%	73.68%	31.21%	36.39%	26.63%	32.02%	35.61%	40.48%	35.08%	33.33%	50.00%
Distance		Percent of producers listing >50% (majority) for any distance											
<50 miles	58.24%	55.03%	67.71%	73.68%	60.28%	55.94%	73.91%	65.01%	57.86%	47.22%	17.54%	22.22%	50.00%
51-100 miles	20.22%	25.13%	18.23%	10.53%	14.42%	26.05%	11.96%	18.36%	22.05%	23.41%	33.33%	11.11%	0.00%
>100 miles	7.25%	7.29%	3.13%	0.00%	9.69%	7.28%	1.09%	1.99%	5.68%	16.27%	31.58%	44.44%	0.00%
Mix	14.29%	12.55%	10.93%	15.79%	15.61%	10.73%	13.04%	14.64%	14.41%	13.10%	17.55%	22.23%	50.00%
Vac Time		Percent of producers listing >50% (majority) on any occasion											
1-3 mo after birth	40.84%	42.71%	36.98%	63.16%	39.24%	41.76%	36.11%	38.48%	37.59%	47.68%	64.15%	75.00%	50.00%
1 mo before wean	10.60%	12.31%	11.98%	26.32%	7.57%	10.73%	6.67%	8.64%	13.46%	9.70%	16.98%	25.00%	0.00%
at weaning	28.31%	24.87%	41.67%	21.05%	23.40%	32.18%	18.33%	25.92%	31.09%	33.76%	32.08%	25.00%	50.00%
booster at weaning	15.93%	17.34%	18.23%	21.05%	12.53%	17.24%	8.89%	10.99%	16.71%	20.25%	45.28%	50.00%	0.00%
Mixed/Double List***	4.3%	2.8%	-8.9%	-31.6%	17.3%	-1.9%	30.0%	16.0%	1.2%	-11.4%	-58.5%	-75.0%	0.0%

** The remaining population assumed to have marked <50% on multiple distances

*** The remaining population assumed to have marked <50% on multiple times (+) or vaccinate more than one full round (-)

Table 5.5: Marketing Overview

	Overall						Region Expected Summary									
	Average Calf Crop Listed						Northeast		Northwest		Panhandle		Southeast		Southwest	
	N	2003	N	2008	N	2013	N	2013	N	2013	N	2013	N	2013	N	2013
Marketing Time																
At Weaning	790	85.90	738	80.46	651	80.93	218	82.82	72	81.29	10	82.5	241	79.61	110	79.72
30+ Days After Wean	356	66.33	416	67.19	381	71.55	117	75.11	37	62.43	4	75	126	72.82	97	68.96
Ret. Own Stocker	360	72.92	426	72.64	398	74.58	103	66.69	89	82.27	5	78	108	69.40	93	81.81
Ret. Other Stocker	13	62.31	17	70.88	18	67.78	6	47.50	2	100.00	1	100	3	73.33	6	69.17
Ret. Custom Feedlot	17	72.35	18	67.78	21	63.10	10	56.50	3	76.67	1	100	5	72.00	2	35.00
Other	80	31.00	109	30.67	86	31.53	30	24.43	17	44.71	2	55	26	30.19	11	29.45
Marketing Venue																
Reg Local Sale	991	92.16	999	90.48	873	91.13	260	90.35	146	94.08	17	99.41	287	90.13	163	90.63
Spc Local Sale	36	64.03	35	54.71	47	57.66	19	64.21	8	55.63	0	.	11	53.18	9	51.11
Reg Rgnl Sale	103	83.88	117	81.48	99	81.39	48	79.06	8	91.25	1	85	22	78.09	20	86.50
Spc Rgnl Sale	16	66.25	22	61.59	32	71.41	14	74.64	2	60.00	0	.	11	63.64	5	84.00
ONS Reg Sale	155	86.81	170	82.97	160	88.38	41	88.49	9	88.89	0	.	59	83.51	51	93.82
Video Auction	8	66.00	14	72.50	21	78.81	4	82.50	4	72.50	0	.	10	74.70	3	96.00
Direct R-S	64	58.67	72	57.04	67	60.52	25	66.60	12	58.33	1	10	18	50.56	11	70.00
Direct R-F	18	70.00	34	65.88	36	67.36	11	61.36	5	71.00	1	100	12	64.58	7	74.29
Other	33	28.82	52	32.94	51	36.69	15	37.67	4	38.75	1	15	24	34.42	7	44.29
Distance to Market																
<50 miles	876	91.63	872	90.38	780	90.48	235	88.64	124	95.65	14	90.36	262	90.08	145	89.81
51-100 miles	305	87.47	323	86.47	302	88.18	111	88.66	39	94.23	5	46	69	84.71	78	90.26
100+ miles	108	82.10	127	76.97	130	77.66	40	72.20	7	79.29	2	52.5	60	80.25	21	82.52

Table 5-5 Continued

	Herd Size Expected Summary													
	1-24		25-49		50-99		100-249		250-499		500-999		1000+	
	N	2013	N	2013	N	2013	N	2013	N	2013	N	2013	N	2013
Marketing Time														
At Weaning	103	87.79	200	85.34	216	79.96	109	72.84	18	53.61	4	75.00	1	100.00
30+ Days After Wean	40	76.95	107	73.22	139	71.84	72	65.46	21	72.62	1	25.00	1	100.00
Ret. Own Stocker	37	71.89	94	71.67	136	73.09	103	79.39	26	77.69	2	75.00	0	.
Ret. Other Stocker	2	100.00	6	54.17	6	68.33	4	71.25	0	.	0	.	0	.
Ret. Custom Feedlot	2	50.00	2	60.00	3	46.67	5	73.00	7	67.86	2	62.50	0	.
Other	10	43.50	22	41.36	32	30.38	20	18.00	2	17.50	0	.	0	.
Marketing Venue														
Reg Local Sale	137	98.54	288	95.94	284	90.32	144	80.27	18	56.39	1	100.00	1	100.00
Spc Local Sale	0	.	6	38.33	22	61.82	16	59.38	3	56.67	0	.	0	.
Reg Rgnl Sale	5	100.00	17	89.41	48	86.56	19	78.16	7	47.86	2	30.00	1	3.00
Spc Rgnl Sale	0	.	6	70.00	11	74.09	10	71.00	3	83.33	2	45.00	0	.
ONS Reg Sale	14	98.57	33	88.18	54	92.37	46	85.26	12	72.08	1	75.00	0	.
Video Auction	1	100.00	2	87.50	3	83.33	9	80.89	5	61.00	0	.	1	97.00
Direct R-S	7	67.14	8	43.75	24	54.58	18	70.00	9	62.78	1	100.00	0	.
Direct R-F	2	55.00	4	71.25	8	38.13	8	82.50	13	78.08	1	50.00	0	.
Other	2	20.00	14	37.86	17	32.94	16	38.50	1	100.00	1	25.00	0	.
Distance to Market														
<50 miles	131	97.18	242	95.92	251	91.02	136	76.80	17	61.47	2	100.00	1	97.00
51-100 miles	25	87.20	74	90.24	111	91.20	74	81.28	18	90.83	0	.	0	.
100+ miles	2	95.00	16	68.31	36	76.67	53	77.92	19	85.26	3	100.00	1	3.00

Table 5.6: Practice Adoption

	Basic			Preconditioning			Management			Record Keeping			
	Castrate	Dehorn	Weaned	Vaccinated	Dewormed	Bank Training	Implanted	NO antibiotics	Age and Source Verification	Vac Records	Med Records	Bday Records	Ind. ID
Total	73.70%	50.12%	40.76%	34.88%	62.65%	49.65%	26.14%	11.68%	15.16%	25.91%	21.35%	24.36%	18.79%
Herd Size													
1-24	62.78%	33.89%	28.33%	25.00%	48.89%	39.44%	17.22%	10.00%	10.56%	22.78%	19.44%	21.67%	13.33%
25-49	68.32%	44.50%	33.25%	26.44%	58.12%	43.72%	18.32%	10.21%	11.78%	20.68%	17.28%	20.68%	15.45%
50-99	74.71%	50.58%	42.00%	34.11%	62.18%	48.49%	25.52%	10.90%	15.55%	24.36%	21.11%	24.59%	20.19%
100-249	84.81%	64.14%	52.74%	47.26%	76.37%	62.45%	40.51%	16.46%	18.99%	32.49%	25.32%	29.96%	22.78%
250-499	90.57%	75.47%	71.70%	75.47%	83.02%	77.36%	49.06%	13.21%	35.85%	54.72%	37.74%	33.96%	28.30%
500-999	75.00%	62.50%	50.00%	62.50%	62.50%	50.00%	37.50%	12.50%	12.50%	50.00%	50.00%	25.00%	50.00%
1000+	100.00%	100.00%	50.00%	50.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Region													
Northeast	71.61%	47.74%	40.45%	32.91%	62.31%	50.75%	17.59%	11.31%	14.07%	27.89%	22.36%	25.13%	19.60%
Northwest	83.33%	61.98%	51.04%	40.63%	70.83%	54.69%	39.58%	13.02%	16.15%	23.96%	21.35%	21.35%	21.88%
Panhandle	94.74%	68.42%	57.89%	57.89%	68.42%	57.89%	36.84%	26.32%	36.84%	47.37%	52.63%	42.11%	36.84%
Southeast	68.32%	43.74%	34.52%	31.44%	58.39%	49.41%	21.99%	10.64%	13.00%	24.11%	19.15%	23.17%	15.84%
Southwest	77.01%	54.02%	42.53%	37.55%	63.60%	44.06%	35.25%	11.88%	18.01%	25.67%	21.07%	26.05%	18.77%

Table 5.7: Incentives: Percentages of Those Adopting Each Practice

	Basic			Preconditioning			Management			Record Keeping			
	Castrate	Dehorn	Weaned	Vaccinated	Dewormed	Bunk Training	Implanted	NO antibiotics	Age and Source Verification	Vac Records	Med Records	Bday Records	Ind. ID
Increases weight gain while on the ranch	46.48%	22.69%	33.02%	31.93%	70.86%	61.53%	79.59%	17.22%	21.43%	27.76%	27.54%	35.87%	27.57%
Lessens incidence of illnesses or injury in my calves	8.60%	24.38%	16.70%	53.44%	26.17%	13.40%	6.21%	22.52%	7.14%	25.67%	28.62%	11.11%	13.17%
Buyers are willing to pay a premium	65.37%	72.07%	63.19%	48.56%	31.23%	36.14%	19.82%	31.13%	47.96%	34.93%	31.16%	36.19%	39.09%
Improves my reputation with buyers	21.09%	22.69%	27.70%	30.60%	19.51%	22.12%	13.61%	21.19%	41.33%	38.51%	37.32%	37.46%	41.98%
Increases performance at stocker/feedlot level	24.13%	20.99%	32.26%	28.82%	25.68%	33.80%	23.37%	11.26%	12.24%	13.73%	11.23%	11.75%	11.93%
Increases quality of beef at consumer level	22.14%	12.50%	14.61%	16.41%	15.93%	12.93%	9.47%	26.49%	11.22%	14.33%	14.13%	9.84%	9.47%
No third party certification	19.73%	16.20%	28.27%	25.28%	17.78%	18.85%	17.16%	20.53%	22.96%	18.21%	14.86%	15.87%	18.11%
Signed affidavit required	2.94%	2.01%	4.93%	5.99%	3.09%	2.80%	3.25%	5.96%	6.63%	3.88%	2.17%	3.49%	4.53%
Third party verification required	1.57%	1.39%	2.66%	3.77%	1.73%	2.02%	2.66%	4.64%	5.10%	3.28%	2.90%	2.86%	3.70%
Had to meet pre-sale requirements for special sale	1.57%	1.23%	3.04%	2.66%	1.48%	1.87%	1.48%	1.99%	2.55%	1.79%	2.17%	2.86%	2.47%
QSA or PVP program	1.57%	1.54%	3.04%	3.55%	1.98%	2.02%	2.07%	1.99%	8.67%	3.58%	3.26%	4.13%	5.35%

Table 5.8: Constraints: Percentages of Those Not Adopting Each Practice

	Basic			Preconditioning			Management			Record Keeping			
	Castrate	Dehorn	Weaned	Vaccinated	Dewormed	Bunk Training	Implanted	NO antibiotics	Age and Source Verification	Vac Records	Med Records	Bday Records	Ind. ID
Haven't done it in the past and have done okay	15.29%	8.37%	13.97%	18.41%	12.84%	10.91%	12.77%	5.69%	9.39%	9.08%	9.44%	8.90%	8.86%
Don't really know what it requires or value it adds	3.82%	2.02%	3.92%	4.04%	2.90%	3.23%	3.66%	2.71%	8.20%	2.92%	2.95%	3.27%	4.29%
Thought about it but need help with specifics of how to implement it on my ranch	0.88%	0.31%	2.09%	1.78%	0.83%	1.08%	1.99%	1.23%	4.28%	0.94%	0.98%	1.23%	2.19%
Hesitant to ask for financing to pay for the upfront costs	1.76%	0.78%	1.31%	0.71%	0.83%	1.08%	1.26%	0.79%	1.09%	0.63%	0.59%	0.72%	1.24%
My lender says no to financing the upfront costs	1.18%	0.47%	0.78%	0.36%	0.62%	0.77%	0.52%	0.44%	0.91%	0.31%	0.29%	0.31%	0.86%
Other cattlemen tried it and it did not pay	2.65%	1.09%	1.83%	0.36%	1.45%	1.54%	1.78%	0.88%	1.09%	0.42%	0.39%	0.61%	0.86%
Requires too much labor	12.94%	6.36%	9.27%	8.55%	6.42%	5.38%	6.18%	1.40%	5.83%	4.18%	4.82%	6.54%	8.00%
Didn't have enough calves to mess with it	7.94%	5.89%	6.92%	3.80%	2.69%	4.61%	3.56%	1.40%	4.92%	2.71%	2.56%	3.07%	4.86%
Buyers don't pay any premium for it	8.82%	3.57%	5.48%	4.87%	5.18%	6.14%	4.61%	3.06%	5.74%	4.18%	3.93%	4.60%	5.71%
Buyers don't pay enough premium to cover the cost	10.59%	4.81%	12.27%	7.72%	6.83%	6.30%	4.61%	3.15%	5.10%	3.44%	3.44%	3.68%	4.38%
Don't want to commit to selling calves through a specific company or group	8.82%	3.26%	2.48%	4.16%	4.14%	3.38%	3.04%	0.96%	1.37%	1.25%	1.28%	0.82%	1.71%
My buyers do it themselves once they have the cattle	1.76%	0.62%	1.31%	0.83%	1.04%	1.08%	1.57%	1.31%	2.64%	1.25%	1.18%	1.33%	1.62%
Don't know where/how to market these cattle	0.46%	0.31%	0.77%	0.54%	0.39%	0.00%	1.16%	1.16%	2.24%	0.93%	0.93%	1.01%	1.31%

Table 5.9: Producer Knowledge

	Basic			Preconditioning			Management			Record Keeping			
	Castrate	Dehorn	Weaned	Vaccinated	Dewormed	Bunk Training	Implanted	NO antibiotics	Age and Source Verification	Vac Records	Med Records	Bday Records	Ind. ID
I am not familiar with this practice	11.76%	6.36%	6.01%	9.74%	8.07%	8.60%	11.73%	7.36%	13.95%	5.43%	5.01%	4.40%	6.48%
I am familiar with this practice but don't use it on my ranch	33.82%	25.43%	33.03%	29.93%	18.01%	23.50%	43.56%	23.20%	32.54%	27.77%	28.81%	0.00%	28.48%
I use this practice but don't know how to use it in marketing my cattle	28.82%	10.70%	7.44%	5.34%	24.22%	14.59%	3.66%	4.82%	5.47%	7.93%	7.18%	13.80%	8.86%
I market my calves to sellers based on this practice	78.82%	30.23%	20.23%	14.01%	45.96%	28.26%	9.21%	4.64%	7.11%	36.33%	9.83%	13.80%	10.00%

Table 5.10: How often producers sought out marketing information from the following sources in the last 12 months

	Never	Once or Twice	More than Twice	% of Total Responding
County Extension Educator	59.32%	13.23%	6.65%	79.20%
OSU State or Area Extension Specialist	59.94%	9.51%	5.80%	75.25%
OSU Fact Sheets	54.91%	11.37%	9.28%	75.56%
OSU Newsletters	54.91%	11.21%	9.13%	75.25%
OSU Websites	58.70%	5.80%	5.80%	70.30%
All OSU Sources		37.90%	30.01%	
Other Websites	1.16%	2.32%	5.26%	8.74%
Veterinarian	44.62%	15.24%	19.88%	79.74%
Livestock market manager/staff	47.56%	11.76%	15.00%	74.32%
Trade magazine	46.71%	11.68%	16.55%	74.94%
Professional marketing service	60.63%	3.09%	3.71%	67.44%
Ag Lender	59.55%	5.26%	3.02%	67.83%
Other Cattlemen	26.45%	19.18%	36.58%	82.21%
Other	0.31%	0.77%	4.10%	5.18%

Table 5.11: Demographic Summary of Oklahoma Cow-Calf Producers (Survey 1)

Overall		Region					Herd Size						
Experience		Northeast	Northwest	Panhandle	Southeast	Southwest	1-24	25-49	50-99	100-249	250-499	500-999	1000+
Expt15	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5-15 Years	12.53%	10.55%	15.63%	10.53%	11.35%	15.33%	21.11%	15.18%	9.98%	7.59%	7.55%	12.50%	0.00%
16-25 Years	18.64%	20.85%	17.71%	5.26%	20.80%	13.41%	19.44%	20.94%	18.79%	15.19%	16.98%	0.00%	0.00%
>25 Years	67.90%	67.34%	66.67%	84.21%	66.90%	70.11%	57.22%	62.83%	70.77%	76.37%	75.47%	87.50%	100.00%
Age													
<30	0.31%	0.25%	0.52%	0.00%	0.24%	0.38%	0.56%	0.52%	0.00%	0.00%	1.89%	0.00%	0.00%
31-40	4.10%	4.02%	4.69%	5.26%	4.26%	3.45%	6.11%	2.62%	3.48%	5.49%	7.55%	0.00%	0.00%
41-50	13.23%	11.81%	16.15%	21.05%	12.06%	14.56%	13.33%	14.66%	12.76%	12.24%	11.32%	0.00%	50.00%
51-64	40.37%	41.96%	43.75%	42.11%	37.35%	40.23%	32.78%	40.58%	39.91%	45.15%	43.40%	62.50%	50.00%
>65	42.00%	41.96%	34.90%	31.58%	46.10%	41.38%	47.22%	41.62%	43.85%	37.13%	35.85%	37.50%	0.00%
Education													
None	4.25%	5.78%	3.65%	0.00%	4.96%	1.53%	9.44%	3.14%	3.71%	3.80%	0.00%	12.50%	0.00%
High School	35.11%	36.18%	32.81%	31.58%	34.75%	36.02%	35.00%	34.29%	35.03%	36.71%	32.08%	50.00%	50.00%
Bachelors	23.82%	19.60%	27.60%	31.58%	22.46%	29.12%	12.78%	22.25%	26.68%	28.69%	28.30%	12.50%	50.00%
Vocational	17.63%	21.86%	17.71%	21.05%	15.13%	14.94%	23.33%	19.11%	16.71%	13.50%	16.98%	0.00%	0.00%
Graduate	19.18%	16.58%	18.23%	15.79%	22.70%	18.39%	19.44%	21.20%	17.87%	17.30%	22.64%	25.00%	0.00%
Income													
<30K	12.45%	14.32%	8.33%	0.00%	13.71%	11.49%	26.11%	13.61%	10.67%	4.64%	7.55%	12.50%	0.00%
30K-60K	27.84%	26.63%	23.44%	26.32%	30.26%	29.12%	31.67%	33.51%	26.68%	21.52%	16.98%	0.00%	0.00%
60K-90K	27.15%	29.90%	26.56%	26.32%	26.24%	24.90%	25.00%	29.84%	29.70%	25.32%	5.66%	12.50%	0.00%
90K-120K	15.55%	14.07%	18.75%	31.58%	15.37%	14.56%	10.00%	14.14%	16.24%	18.57%	26.42%	12.50%	0.00%
>120K	17.01%	15.08%	22.92%	15.79%	14.42%	19.92%	7.22%	8.90%	16.71%	29.96%	43.40%	62.50%	100.00%
Income From Cattle													
0%	5.34%	6.78%	3.65%	0.00%	5.91%	3.83%	12.22%	4.19%	4.87%	3.38%	3.77%	0.00%	0.00%
1-20%	53.98%	51.26%	47.40%	42.11%	60.52%	53.26%	80.00%	73.56%	47.56%	27.00%	7.55%	0.00%	0.00%
21-40%	22.12%	22.86%	26.56%	36.84%	19.15%	21.46%	6.11%	18.06%	29.23%	29.11%	18.87%	12.50%	0.00%
41-60%	11.37%	11.06%	12.50%	21.05%	9.69%	13.03%	1.11%	2.88%	13.69%	25.32%	22.64%	25.00%	50.00%
61-80%	4.33%	5.03%	8.33%	0.00%	1.18%	5.78%	0.56%	1.31%	3.25%	10.13%	16.98%	25.00%	50.00%
81-100%	2.86%	3.02%	1.56%	0.00%	3.55%	2.68%	0.00%	0.00%	1.39%	5.06%	30.19%	37.50%	0.00%
Membership													
BQA	7.11%	6.28%	5.73%	5.26%	7.09%	6.51%	2.17%	3.97%	8.73%	9.13%	21.05%	22.22%	0.00%
MC	3.66%	3.77%	0.52%	0.00%	4.96%	1.92%	2.17%	1.74%	5.02%	3.97%	10.53%	0.00%	0.00%
Local Cattlemen's	0.2065	23.87%	18.23%	0.00%	20.33%	19.54%	11.67%	15.18%	22.74%	27.00%	45.28%	25.00%	0.00%
OCA	0.2026	20.60%	25.52%	26.32%	15.60%	22.99%	6.67%	14.14%	19.95%	31.22%	56.60%	62.50%	50.00%
NCBA	0.0797	8.29%	9.38%	10.53%	6.38%	8.81%	1.67%	3.40%	6.96%	13.08%	39.62%	50.00%	50.00%
Breed Association	0.0967	8.54%	11.98%	10.53%	8.51%	11.49%	3.89%	9.16%	10.21%	11.81%	18.87%	12.50%	0.00%

Table 5.12: Description of Independent Variables

Abbreviation	Definition
Base	Average price listed by individual buyer at each location
Location	Consists of six binary (0,1) variables assigned 1 if sale location and 0 otherwise
Choice Variables	Summary Table 3-1
Demographics	
Sex	Male or Female. Binary (0,1) assigned 1 if sex, 0 otherwise
Age	Consists of 5 binary (0,1) age groups, assigned 1 if age, 0 otherwise
Edu	Consists of
Buy	Who respondent is buying for. Consists of 4 binary (0,1) variables, assigned 1 if buying, 0 otherwise
Personal/Empl	Listed percentage totaling 100, amount purchased for personal use v for employer
Direct/Auction	Listed percentage totaling 100, direct buying v auction buying
Volume	
Freq	How often feeder calves are purchased at auction. Consists of 5 binary (0,1) variables assigned 1 if frequency and 0 otherwise
Day	How many feeder calves purchased per day, consists of 4 binary (0,1) variables assigned 1 if volume and 0 otherwise
Year	How many feeder calves purchased per year, consisting of 6 binary (0,1) variables assigned 1 if volume and 0 otherwise
BuyPer	Who respondent is buying for. Consists of 4 binary (0,1) variables assigned 1 if buying for, 0 otherwise
Sale	
Destination	Immediate destination intended for calves after purchase (Resale, Pasture, Feedlot) (0,1) variables assigned 1 if destination, 0 otherwise. Those choosing more than one destination included in Multiple (0,1) variable
Rep	Whether buyer considers reputation when making a purchasing decision. (RepYes/RepNo, binary 0,1)
Quality/Quantity	Whether buyer prefers quality (0,1) or quantity (0,1)

Beef Management and Marketing Survey

**Please answer the following questions as completely as possible. Your best estimates are acceptable.
You are not expected to provide exact numbers from ranch records.**

1. How many beef cows do you currently own?

☐ 1 to 24 ☐ 25 to 49 ☐ 50 to 99 ☐ 100 to 249 ☐ 250 to 499 ☐ 500 to 999 ☐ 1000 +

2. In which region of the state is your cattle operation? (As defined by Interstate 40 and Interstate 35)

☐ Panhandle ☐ Northwest ☐ Southwest ☐ Northeast ☐ Southeast

3. What are the *predominant* breeds used in your operation? (Crossbred example: Angus X Hereford)

	Purebreds:	Crossbreds:		
Sires			X	
			X	
			X	
Cows			X	
			X	
			X	

4. What do you consider to be the primary nature of your beef business?

☐ Sale of commercial calves ☐ Purebred seedstock ☐ Youth show animals
☐ Other (Please describe): _____

Current Management and Marketing Practices

1. Indicate what percentage of your herd's calves are born for each month. (*Total should add to 100 percent*)

Month	Percent	Month	Percent	Month	Percent
January	%	May	%	September	%
February	%	June	%	October	%
March	%	July	%	November	%
April	%	August	%	December	%

2. Indicate what percentage of your calves are vaccinated for respiratory diseases (IBR, BVD, etc.) at the specified times:

Timing of Vaccination	Percent Vaccinated
1 to 3 months	
1 month before weaning	
At weaning	
Booster given at weaning	

3. Enter an estimate for the percentage of your calves marketed for the following categories for each year specified.

Percentage of Calves Sold	2003	2008	2013 (Expected)
Marketed at weaning	%	%	%
Marketed at least 30 days post-weaning	%	%	%
Retained and marketed after my own stocker program	%	%	%
Retained and marketed after someone else's custom stocker program	%	%	%
Retained and marketed after a custom feedlot program	%	%	%
Other: <i>(Please describe.)</i>	%	%	%
TOTAL	100%	100%	100%

****Column totals should add to 100 percent****

Enter an estimate for the percentage of your calves marketed for the following categories for the years specified. *(Continued)*

Percentage of Calves Sold	2003	2008	2013 (Expected)
Through regular <i>Local</i> livestock market sales	%	%	%
Through special <i>Local</i> livestock market sales (preconditioned, breeding sales, etc.)	%	%	%
Through regular <i>Regional</i> livestock market sales	%	%	%
Through special <i>Regional</i> livestock market sales (preconditioned, breeding sales, etc.)	%	%	%
Through Oklahoma National Stockyards regular sales	%	%	%
Through video, satellite or internet auction	%	%	%
Directly from ranch to stocker	%	%	%
Directly from ranch to feedlot	%	%	%
Other: <i>(Please describe)</i>	%	%	%
TOTAL	100%	100%	100%
Percentage of Calves Sold	2003	2008	2013 (Expected)
Less than 50 miles from the ranch	%	%	%
Within 51 to 100 miles from the ranch	%	%	%
More than 100 miles from the ranch	%	%	%
TOTAL	100%	100%	100%

****Column totals should add to 100 percent****

4. For the Management and Marketing practices you **DO NOT** use in your cattle operation, please tell us why. ***(Check all that apply)***

	Castrate bull calves to be sold as steers.	Calves weaned 45 days before marketing.	Two rounds of respiratory vaccinations.	Dehorn calves.	Get calves used to feed bunks.	Dewormed calves.	Implant calves.	Use NO antibiotics.	Keep records of medical treatments.	Keep records of calf birthdates.	Age and Source Verification.	Documentation for Country of Origin Labeling (COOL).
I am not familiar with this practice.												
I am familiar with this practice but don't use it on my ranch.												
I use this practice, but don't know how to use it in marketing my cattle.												
I market my calves to sellers based on this practice.												
Haven't done it in the past and have done okay.												
Don't really know what it requires or value it adds.												
Thought about it but need help with specifics of how to implement it on my ranch.												
Hesitant to ask for financing to pay for the upfront costs.												
My lender says no to financing th upfront costs.												
Other cattlemen tried it and it did not pay.												
Requires too much labor.												
Didn't have enough calves to mess with it.												
Buyers don't pay any premim for it.												
Buyers don't pay enough premium to cover the cost.												
Don't want to commit to selling calves through a specific company or group.												
My buyers do it themselves once they have the cattle.												
Don't know were/how to market these cattle.												

5. For the Management and marketing practices you **DO** use in your cattle operation, please tell us why. **(Check all that apply)**

	Castrate bull calves to be sold as steers.	Calves weaned 45 days before marketing.	Two rounds of respiratory vaccinations.	Get calves used to feed bunks.	Dewormed calves.	Implant calves.	Use NO antibiotics.	Keep records of medical treatments.	Keep records of calf birthdates.	Age and Source Verification.	Documentation for Country of Origin Labeling (COOL).
Increases weight gain while on the ranch.											
Lessens incidence of illnesses or injury in my calves.											
Buyers are willing to pay a premium.											
Improves my reputation with buyers.											
Increases performance at stocker/feedlot level.											
Increases quality of beef at consumer level.											
Other:											
Information provided to buyer at marketing:											
Management practices announced by auctioneer at livestock market. No third party certification.											
Management practices announced by auctioneer at livestock market. Signed affidavit required.											
Management practices announced by auctioneer at livestock market. Third party verification required.											
Had to meet pre-sale requirements for special sale.											
Participant in Quality System Assessment (QSA) or Process Verified (PVP) Program. (See example below.)											

Examples of some programs active in Oklahoma:

ABS Global, AgInfo Link, Angus Source, AzTx Cattle, Champion Innovations, IMI Global, Maverick Ranch, Micro Beef Technologies, Morgan-Davis International, Power Genetics, Red Angus, Samson, Sterling Solutions, Texas Cattle Feeders Association.

6. Complete the following table:

Percentage of your calves participating in:	2003	2008	2013 (Expected)
A marketing program through an animal health company, breed association, USDA PVP or an umbrella program. (See examples below.)	%	%	%
If you are comfortable sharing the specific program, please list the program here or circle those below that apply:			

Examples of some programs active in Oklahoma:

ABS Global, AgInfo Link, Angus Source, AzTx Cattle, Brangus Gold Star, Champion Innovations, Global Management, Hereford Verified, IMI Global, Laura's Lean, Merial SureHealth, Micro Beef Technologies, Oklahoma Quality Beef Network, Pfizer Animal Health, Power Genetics, Red Angus, Samson, Simmental.

7. If you regularly use some of these marketing and management practices listed above, but do not market your calves through a special program, please tell us why by ranking your **top 3 reasons** of those given below.

Reason	Rank Top 3
Don't know where/how to find programs or sales that market value-added cattle	
Reduces flexibility in marketing my cattle.	
Don't want to make a long term commitment.	
Don't want to be tied to a specific company.	
Can get just as much for my calves without the program.	
Buyers know the value of my calves without using a program.	
Would consider it if I could use a program that isn't tied to a specific company.	
Lack of nearby market that distinguishes value-added calves or offers a special sale.	
Program sale dates don't match up with my weaning program.	
Other: <i>(Please specify)</i>	

Demographics

1. How many years have you been in the cattle business?

☐ Less than 5 ☐ 5 to 15 ☐ 16 to 25 ☐ Over 25

2. Please select your age group.

☐ Under 30 ☐ 31 to 40 ☐ 41 to 50 ☐ 51 to 64 ☐ 65 or over

3. Check the category that best describes the highest level of education you have attained.

☐ High school Graduate ☐ Vocational, Technical, or 2 year degree ☐ Bachelor's Degree ☐ Graduate or Professional Degree ☐ None of these

4. Are you a graduate of OSU's Master Cattleman program or a current participant expecting to graduate in the next 12 months? ☐ Yes ☐ No

5. Are you a member of any of the following? (Please check all that apply.)

☐ Local/County Cattlemen's Association ☐ Oklahoma Cattlemen's Association
☐ National Cattlemen's Beef Association ☐ Breed Association: _____

6. Have you completed Beef Quality Assurance (BQA) training? ☐ Yes ☐ No

7. How often have you sought information on marketing opportunities for your cattle from the following resources in the last 12 months?

	Never	Once or Twice	More than Twice
County Extension Educator			
OSU State Extension Specialist			
OSU Fact Sheets			
OSU Newsletters			
OSU Websites			
Other Websites <i>(Please specify)</i> :			
Veterinarian			
Livestock market manager/staff			
Trade magazine			
Professional marketing service			
Ag Lender			
Other Cattlemen			
Other <i>(Please specify)</i> :			

8. Which of the following would be most helpful to you as a source of information on *Value Added Marketing* in cattle? Please rank your top 3 picks.

Information Source	Rank Top 3
County Meetings	
Newsletters	
E-mails	
OSU Fact Sheets	
Ranch Demonstrations	
Webinars (free online seminars)	
Podcasts	

9. Is there specific assistance that would be useful to you in implementing certain value enhancing management and/or marketing practices?

10. Which of the following best describes the past year's household **NET** income from all sources?

☐ Less than \$30,000 ☐ \$30,000 to \$59,999 ☐ \$60,000 to \$89,999 ☐ \$ 90,000 to \$119,999 ☐ \$120,000 and above


11. Approximately what percentage of the past year's household net income came from your beef cattle operation?

☐ Zero percent ☐ 1 to 20 percent ☐ 21 to 40 percent ☐ 41 to 60 percent ☐ 61 to 80 percent ☐ 81 to 100 percent


Extension Presentation 1

Oklahoma Cooperative Extension Service Conference
January 13, 2016

Beef Management and Marketing



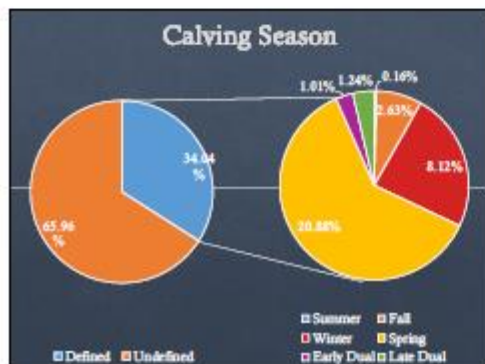
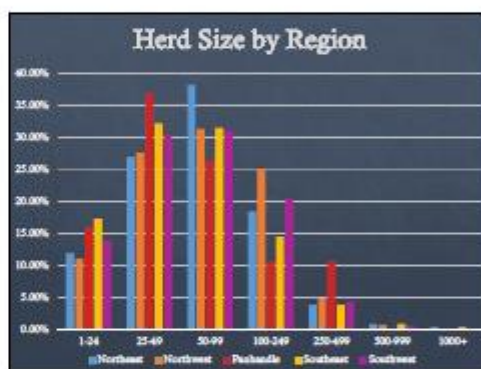
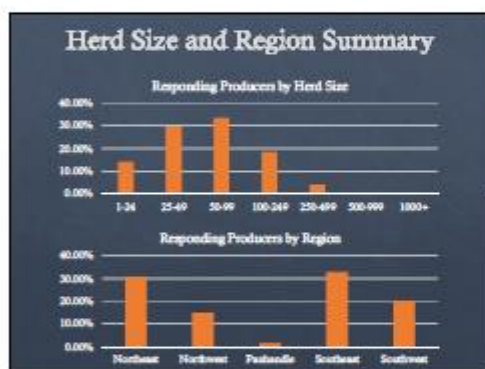
Dr. Kelli Rector
Livestock Economist
Dr. Donald Ford
Livestock Economist
Jane Rector
Graduate Research Assistant



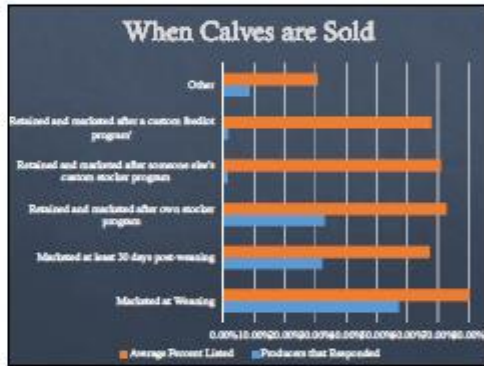
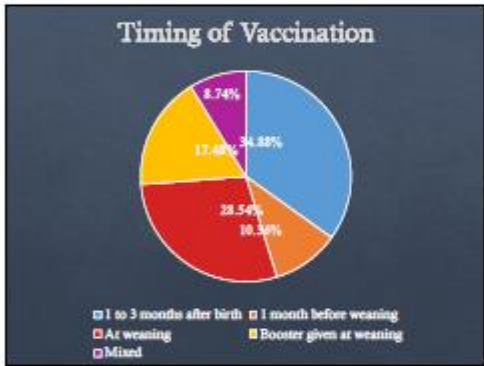
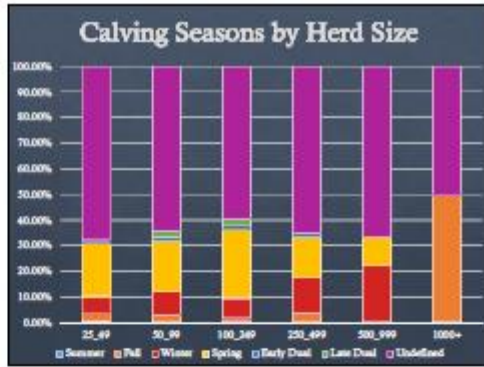
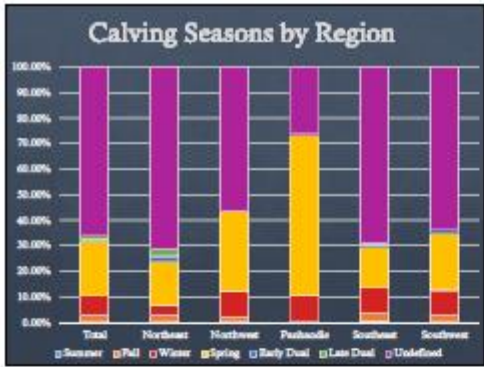
2016-2017 Oklahoma Beef Management and Marketing Survey

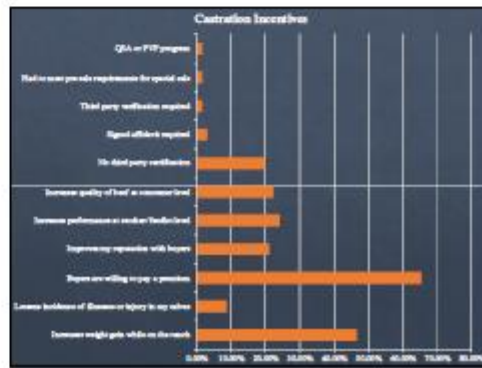
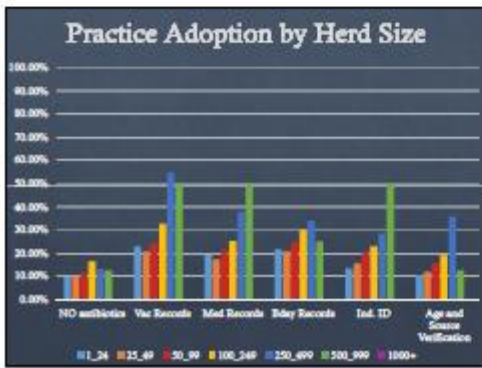
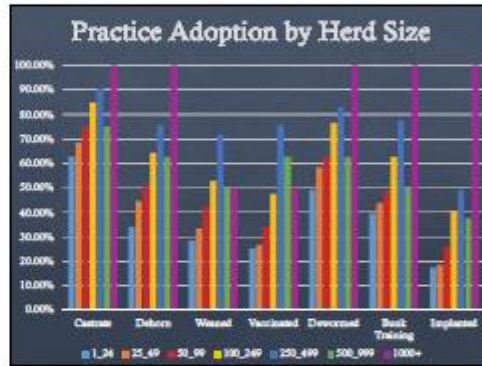
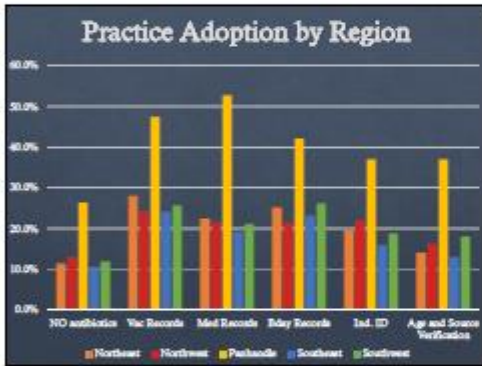
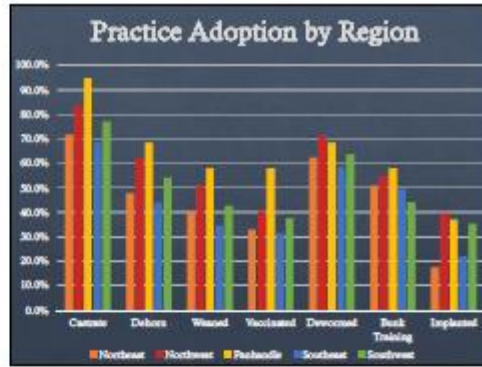
Survey Description

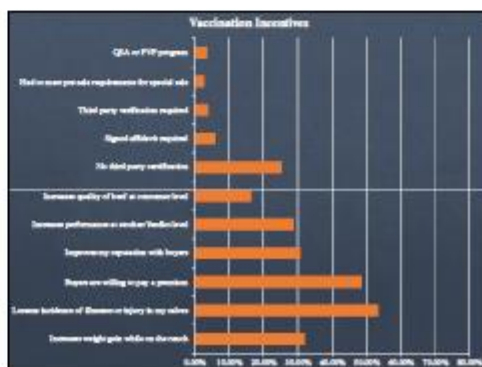
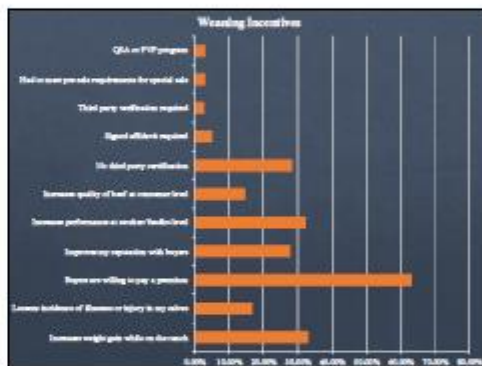
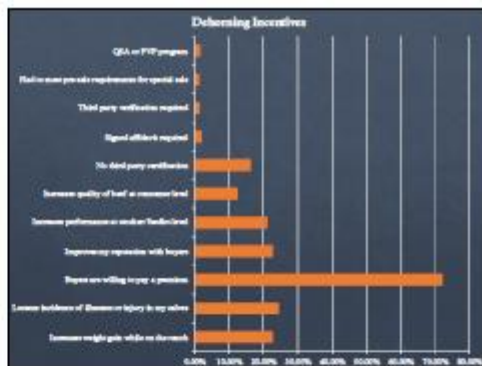
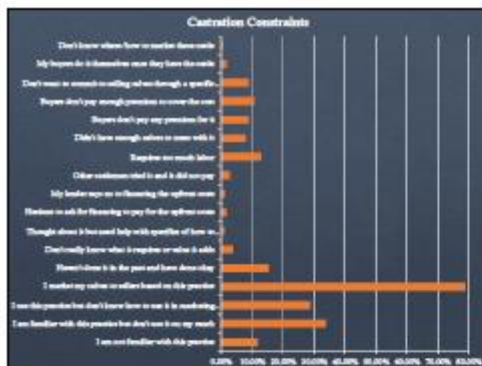
- Solicits information regarding cow-calf producers' adoption of management and marketing practices
- Researchers and extension personnel of Agricultural Economics and Animal Science designed the survey
- Survey distributed by United States Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS) Oklahoma City office
- 17,511 surveys sent; 1293 usable responses
- Data cleaned for non-responses and incorrect primary nature of business

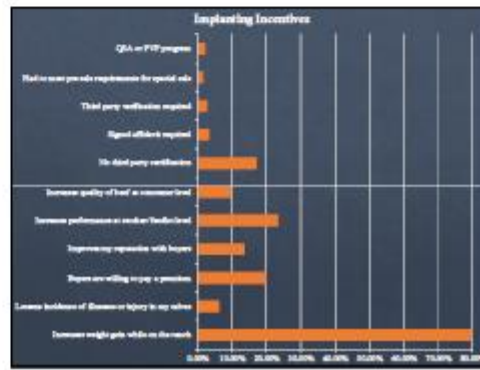
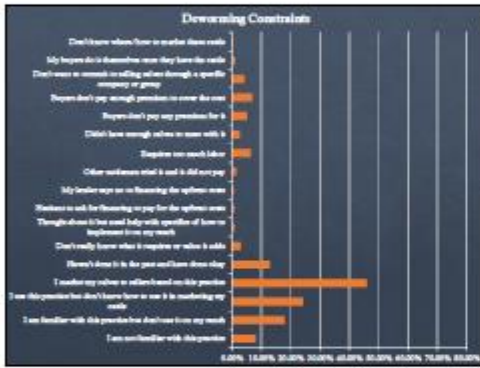
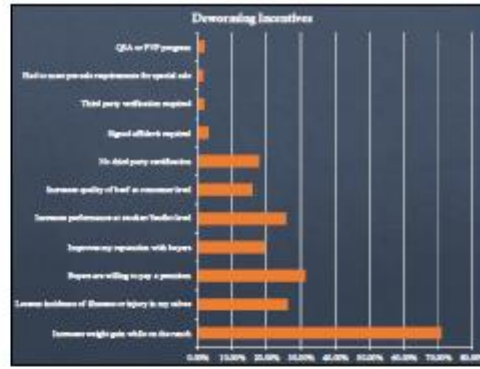
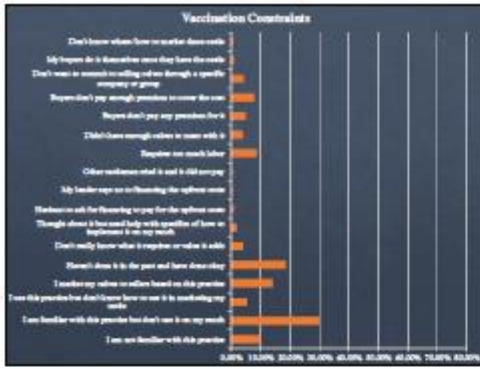


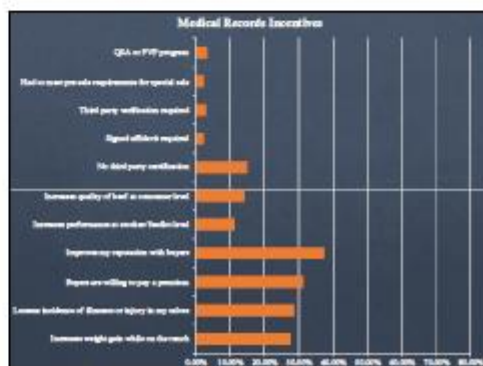
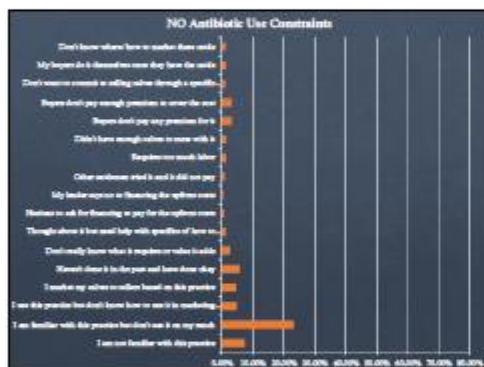
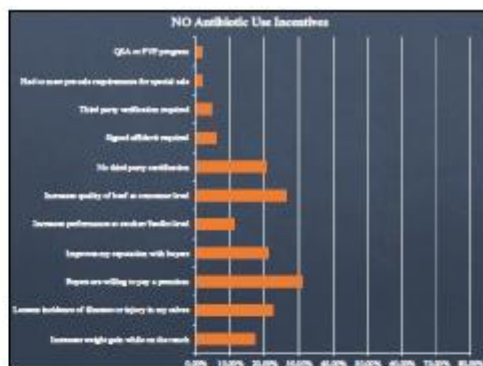
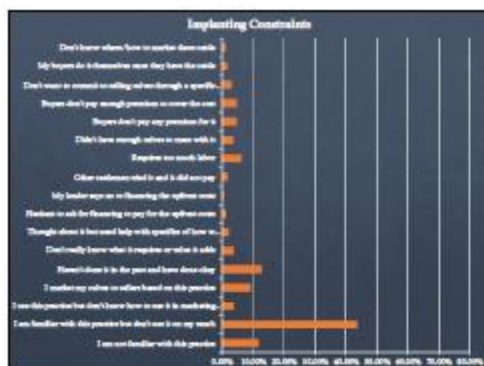
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Mid Spring	March	April	May
Late Spring	April	May	June
Early Summer	May	June	July
Mid Summer	June	July	August
Late Summer	July	August	September
Early Fall	August	September	October
Mid Fall	September	October	November
Late Fall	October	November	December
Early Winter	November	December	January
Mid Winter	December	January	February
Late Winter	January	February	March
Early Dual	February	March	April
Mid Dual	March	April	May
Late Dual	April	May	June

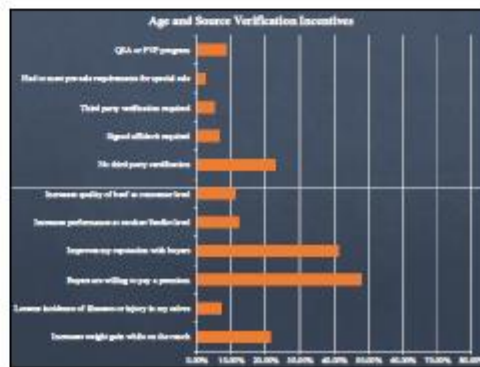
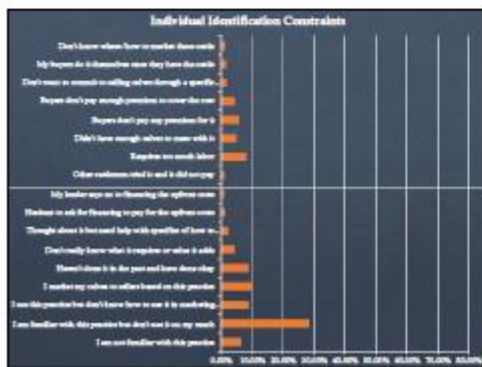
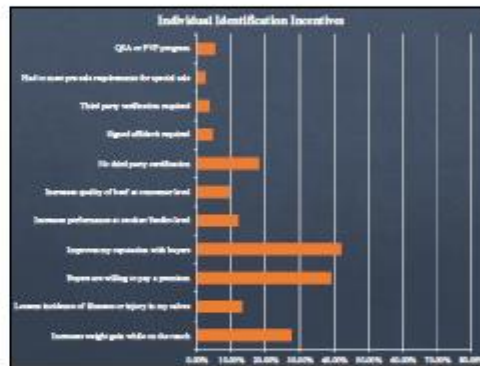
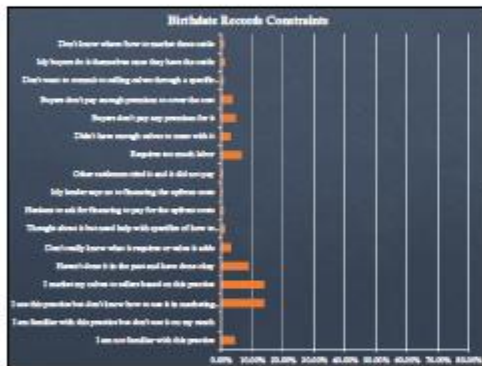
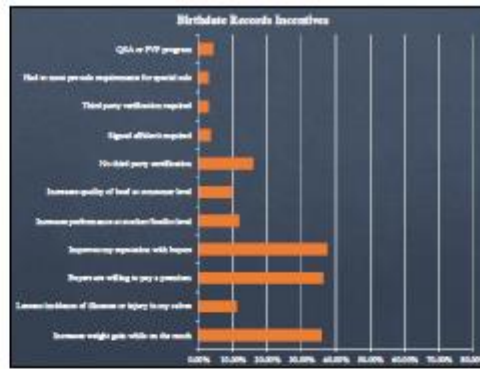
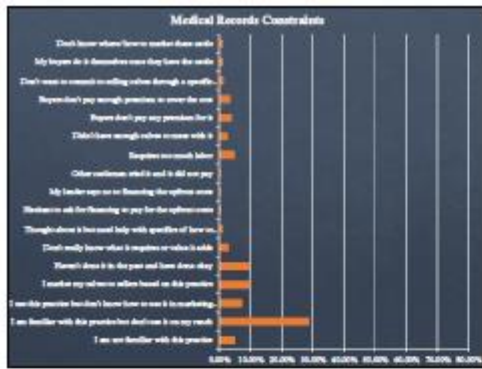


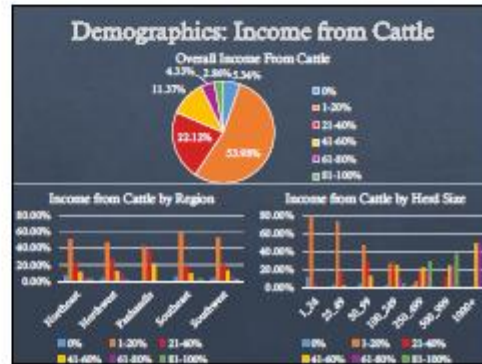
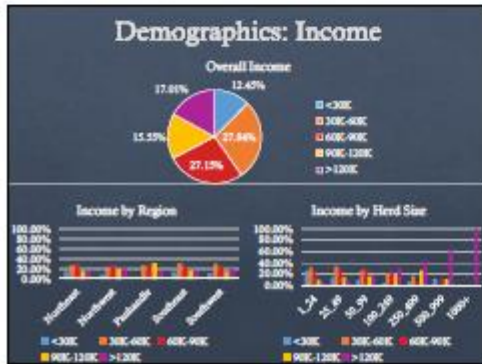
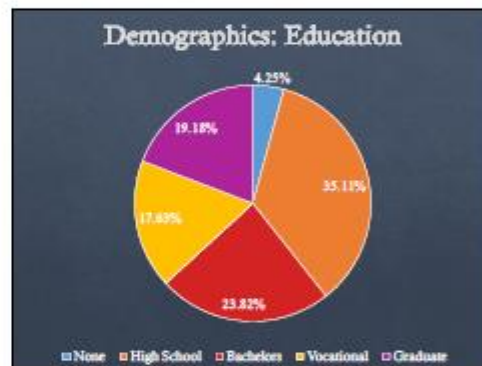
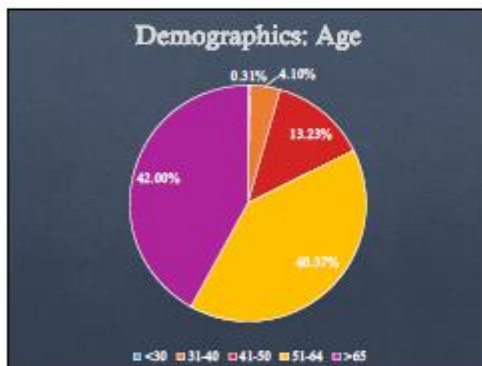
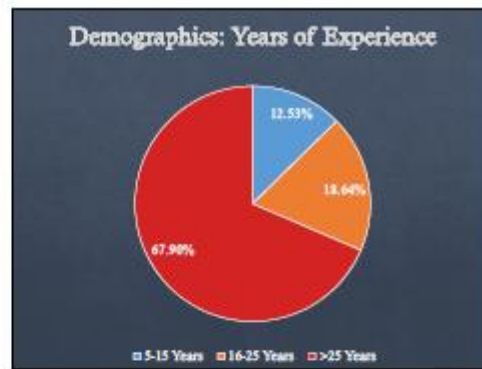
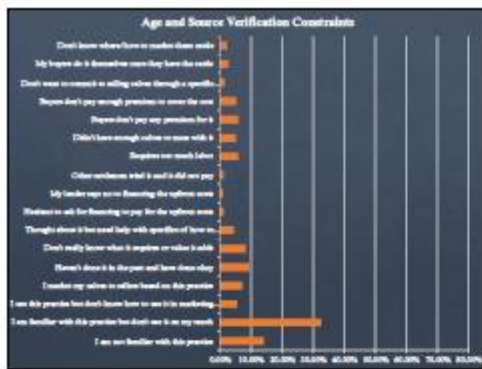


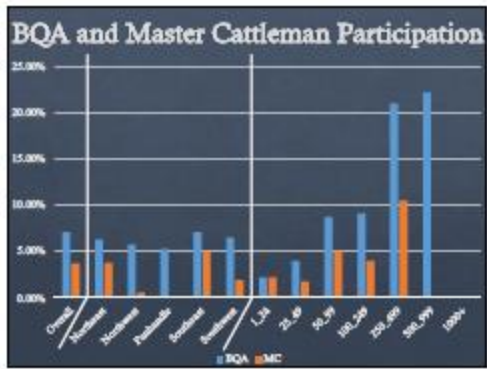












Questions? Comments?

Survey 2: OSU IRB Number AG1538

OSU Agricultural Economists are conducting a survey of cattle buyers in order to understand more about the value of reputation of the seller in feeder cattle auctions. We are asking your participation in this research survey because of your role in the cattle industry. Your candid answers to the questions presented will help us to better understand the market's role in assigning value to cattle at livestock markets. The primary goal of the survey is to gather information that helps us better serve the Oklahoma beef industry.

We know that your time is valuable but know that your input into this survey will be valuable to us. We estimate that the survey will take less than 10 minutes of your time. Though the survey does ask for some demographic information, no personal identifying information is collected, so your responses are completely confidential.

Consent and Accessibility of Survey Results:

Your completed survey serves as your consent to participate in this research endeavor and as your permission for us to use your response. There are no known risks associated with this project which are greater than those ordinarily expected in daily life. Individual responses are kept confidential and no information is collected to individually identify you. Only totals, averages and other statistical measures will be published. Data storage will be on a secured OSU computer network server. Summary results of the survey will be published as an Oklahoma Cooperative Extension Service Factsheet at the completion of the study and will be available free of charge on <http://www.beefextension.com>.

Reputation is defined as a buyer's expectation of quality based on some *previous* knowledge of a seller or the seller's cattle. Reputation may impact cattle value *in addition to or in place of* visual characteristics of the cattle currently marketed by the seller. In this survey, reputation of the seller/cattle will vary across three levels: negative, positive, and unknown.

- **Positive reputation:** You or someone you know has previously purchased cattle from the seller and performance and quality was satisfactory.
- **Negative:** You or someone you know has previously purchased cattle from the seller and performance and quality was inadequate.
- **Unknown:** You have no previous knowledge of the seller/cattle.

Preconditioning is a way to add value to calves by preparing them to enter the feedlot. Preconditioned calves have been castrated, dehorned, dewormed, vaccinated, weaned for at least 30 days, and feed bunk trained. In this survey, preconditioning will vary across three levels: none, non-certified, and certified.

- **Certified preconditioned:** Calves have third-party verification that the bundle of preconditioning practices have been implemented.
- **Non-certified preconditioned:** Calves are marketed as preconditioned, but without verification.
- **No preconditioning:** Calves are marketed with no known preconditioning practices implemented beyond castration and dehorning.

You will be asked a series of questions about the value of reputation and preconditioning. A brief questionnaire regarding your personal opinion on what defines reputation cattle follows. The survey ends with a demographics section.

Although the following questions are hypothetical, please be as realistic as possible when choosing prices. The lots presented are near identical (breed, lot size, frame, muscling, general appearance and temperament). Please focus all buying decisions upon the levels of reputation and preconditioning offered. There is an option of no purchase in each question. Prices are in \$/cwt.

To begin the survey, please click the button in the bottom right hand corner.

What location are you at today?



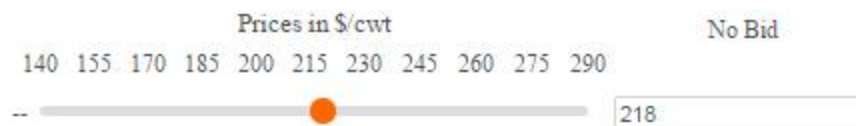
The USDA Agricultural Marketing Service described the above cattle as slightly fleshy Medium and Large No. 1 steers in the 500-599 weight range.

What do you believe the average price (to the nearest dollar) for the above cattle (no known reputation or preconditioning) to be at this location, this week?

A current market report from the Oklahoma National Stockyards can be found by following the link below for a basis.

http://www.ams.usda.gov/mnreports/ko_1s750.txt

As you click and drag the ticker, the exact price you choose will appear to the right.



The following lots are uniform over all qualities and characteristics except those specified. The lots are all black hided, slightly fleshy, Medium and Large No. 1 steers in the 500-599 lb. weight range, as shown in the video.



What is the maximum amount you would be willing to bid on each lot?

As you click and drag the ticker, the exact price you choose will appear to the right. If you are not willing to bid on a particular lot, please select "No Bid".



In your opinion, what are the most important attributes of the seller when considering positive reputation?

Please rank by clicking and dragging each line of text to the desired destination. For example, if you consider the most important attribute to be that previous lots of calves purchased from the seller have performed well, click on that row and drag it to the top of the list. Continue this process until the list reflects your rankings.

You are friends/neighbors with the seller.

You attend the same church as the seller.

Previous lots of calves purchased from the seller have performed well.

Your friend/neighbor has previously purchased from the seller and saw good performance.

Other:

In your opinion, what affects seller reputation the most?

Please rank by clicking and dragging each line of text to the desired destination. For example, if you consider knowledge of the seller to affect seller reputation most, click on that row and drag it to the top of the list. Continue this process until the list reflects your rankings.

Third-party preconditioning verification (such as OQBN or similar programs)

Preconditioning announcements at sales

Knowledge of seller

Previous performance

Other:

If faced with choosing quality or quantity, which scenario best describes your purchasing habits/preferences?

- ☐ Purchasing fewer calves than intended (short truck) of good quality
- ☐ Purchasing a full truck of calves, some being of unknown quality.

What is your gender?

- ☐ Male
- ☐ Female
-

What is your current age?

- ☐ Under 25
- ☐ 25 to 34
- ☐ 35 to 44
- ☐ 45 to 54
- ☐ 55 to 64
- ☐ 65 or over
-

What is the highest level of education you have completed?

- ☐ Less than High School
- ☐ High School / GED
- ☐ Some College
- ☐ 2-year College Degree
- ☐ 4-year College Degree
- ☐ Masters Degree
- ☐ Doctoral Degree
- ☐ Professional Degree (DVM, JD, MD)
-

What are the estimated percentages of cattle you buy directly and at auction? (Should total 100%)

Direct Buying	<input type="text" value="0"/>
Auction Buying	<input type="text" value="0"/>
Total	<input type="text" value="0"/>

How often do you buy feeder calves at auction?

- ☐ Weekly
 - ☐ Monthly
 - ☐ Bi-Annually
 - ☒ Annually
 - ☐ Never
-

Do you buy for yourself or your employer?

- ☐ For own operation
- ☐ For your employer/company
- ☐ For multiple buyers
- ☐ For both personal use and employer

What are the estimated percentages of cattle you buy for personal use and for your employer? (Should total 100%)

Personal Use	<input type="text" value="0"/>
Employer	<input type="text" value="0"/>
Total	<input type="text" value="0"/>

What is the intended immediate destination of purchased calves? (Choose all that apply.)

Resale ☐

Pasture ☐

Feedlot ☐

When you purchased feeder cattle last, did your buying decision reflect the reputation of the seller?

☐ Yes

☐ No

When you make a cattle purchase at auction, how many head of cattle do you usually buy over the course of the day?

☐ 1-25 head

☐ 26-75 head

☐ 76-200 head

☐ >201 head

When you make a cattle purchase at auction, how many head of cattle do you usually buy over the course of a year?

☐ 1-50

☐ 51-200

☐ 201-500

☐ 501-1000

☐ 1001-2500

☐ >2501

Thank you for your time in completing the survey, and in helping us better serve you!

If you have questions concerning survey content, please contact:

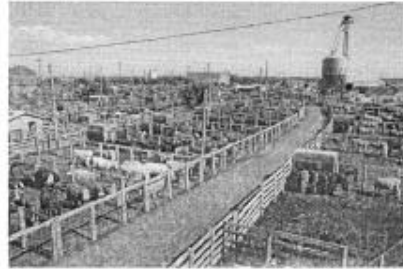
Amy Boline
415 Ag Hall
Oklahoma State University
Stillwater, OK 74078
Ph: 620-757-0042
amy.boline@okstate.edu

Kellie Raper
514 Ag Hall
Oklahoma State University
Stillwater, OK 74078
Ph: 405-744-9819
kellie.raper@okstate.edu

If you have questions about your rights as a research volunteer, you may contact:

Dr. Shelia Kennison
IRB Chair
219 Cordell North
Stillwater, OK 74078
Ph: 405-744-1676
irb@okstate.edu

Feeder Cattle Buyer Input Needed!



Assessment of the Value of Seller Reputation

Amy Boline
415 Ag Hall
Oklahoma State
University
Stillwater, OK 74078
Ph: 620-757-0042
amy.boline@okstate.edu

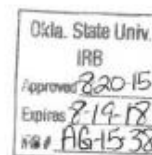
Dr. Kellie Raper
514 Ag Hall
Oklahoma State
University
Stillwater, OK 74078
Ph: 405-744-6082
kellie.raper@okstate.edu

OSU Agricultural Economists are conducting a survey of cattle buyers in order to understand more about the value of reputation in feeder cattle. The research team includes second year Masters student Amy Boline and advisor Dr. Kellie Raper.

We are asking your participation in this research survey because of your role in the cattle industry. Your candid answers to the questions presented will help us to better understand the market's role in assigning value to cattle at livestock markets. The primary goal of the survey is to gather information that helps us better serve the Oklahoma beef industry.

We know that your time is valuable but know that your input into this survey will be valuable to us. The survey should take less than 10 minutes of your time. Though the survey does ask for some demographic information, no personal identifying information is collected, so your responses are completely confidential.

We strongly encourage you to stop by the table to complete the survey. Thank you in advance for your time in completing the survey!



Block 5

OSU Agricultural Economists are conducting a survey of cattle buyers in order to understand more about the value of reputation in feeder cattle. We are asking your participation in this research survey because of your role in the cattle industry. Your candid answers to the questions presented will help us to better understand the market's role in assigning value to cattle at livestock markets. The primary goal of the survey is to gather information that helps us better serve the Oklahoma beef industry.

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Oklahoma State University Institutional Review Board

Date: Thursday, August 20, 2015
IRB Application No AG1538
Proposal Title: Cattle buyers' assessment of the value of seller reputation

Reviewed and
Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 8/19/2018

Principal
Investigator(s):

Kellie Raper	Amy Boline
514 Ag Hall	
Stillwater, OK 74078	Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

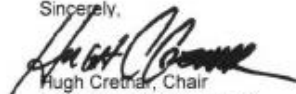
☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,


Hugh Cretnar, Chair
Institutional Review Board

VITA

Amy Boline

Candidate for the Degree of

Master of Science

Thesis: ESSAYS ON BEEF CALF MANAGEMENT PRACTICES AND THE
 MARKET VALUE OF SELLER REPUTATION

Major Field: Agricultural Economics

Biographical:

Education:

Completed the requirements for the Master of Science in Agricultural Economics
at Oklahoma State University, Stillwater, Oklahoma in May, 2016.

Completed the requirements for the Bachelor of Science in Agribusiness at
Kansas State University, Manhattan, Kansas in May 2014.

Experience:

Research and Teaching Assistant, Department of Agricultural Economics,
Oklahoma State University, Stillwater, Oklahoma, August 2014 — May
2016.